OIPE
JUN 21 2004
PATENT & TRADEMARK OFFICE
JC

1/30

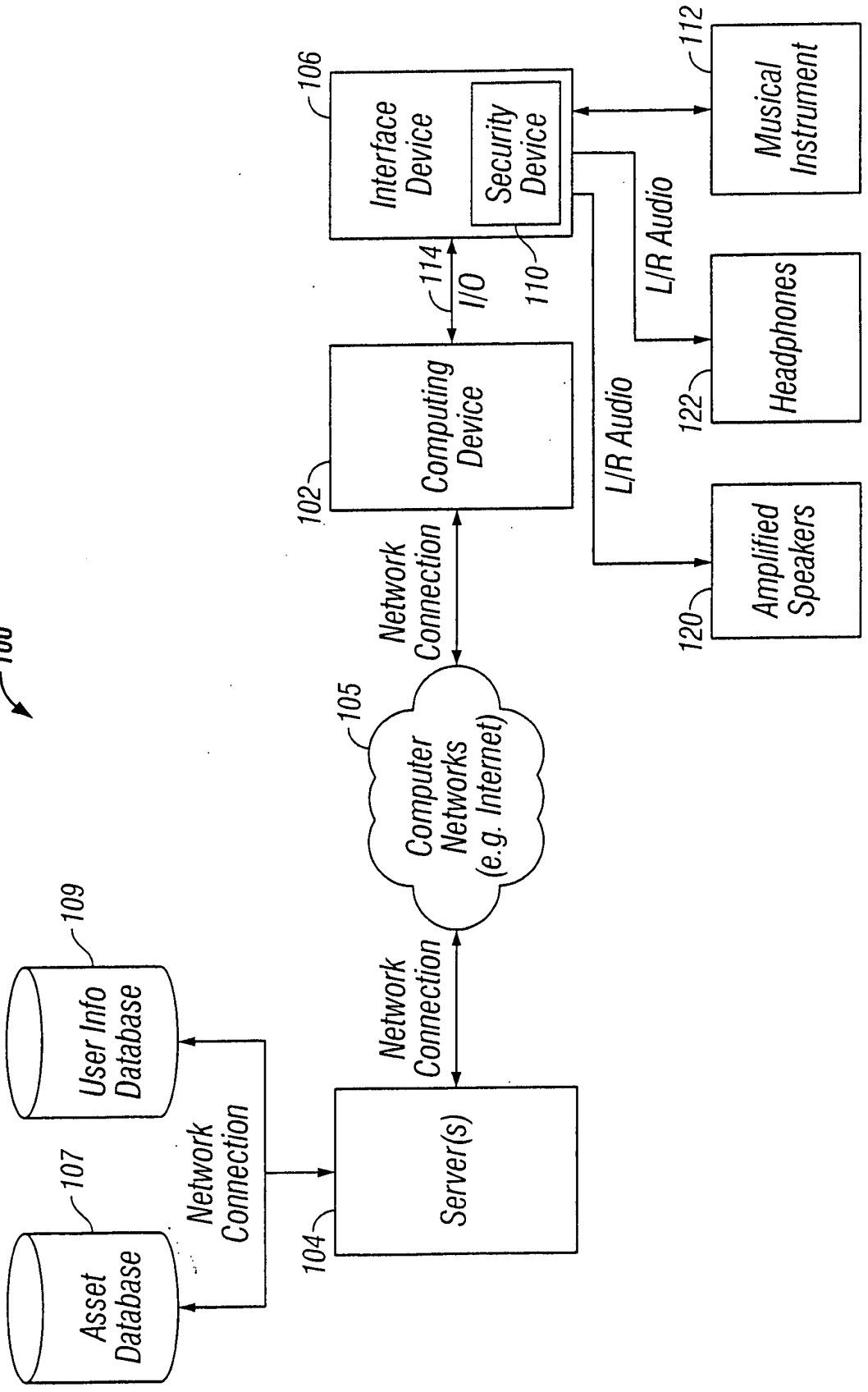

FIG. 1

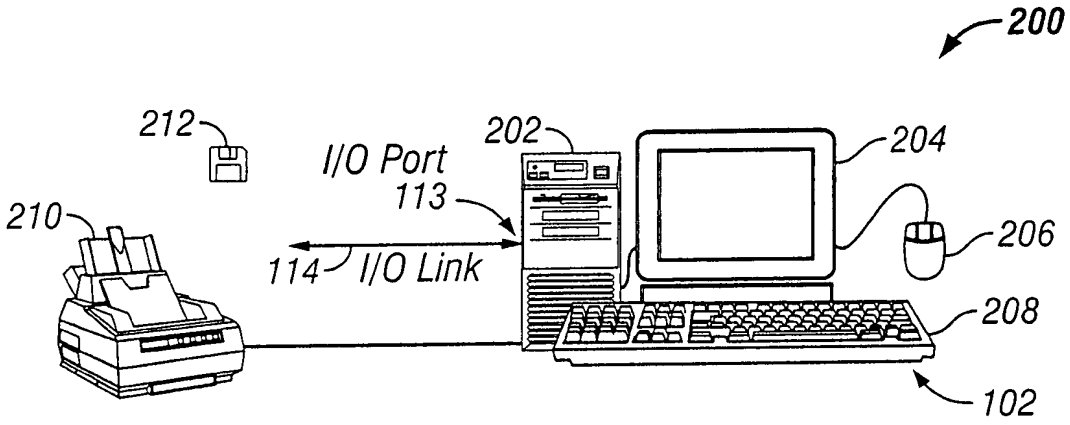
200
212
I/O Port
113
202
204
210
206
114
I/O Link
208
102

FIG. 2a

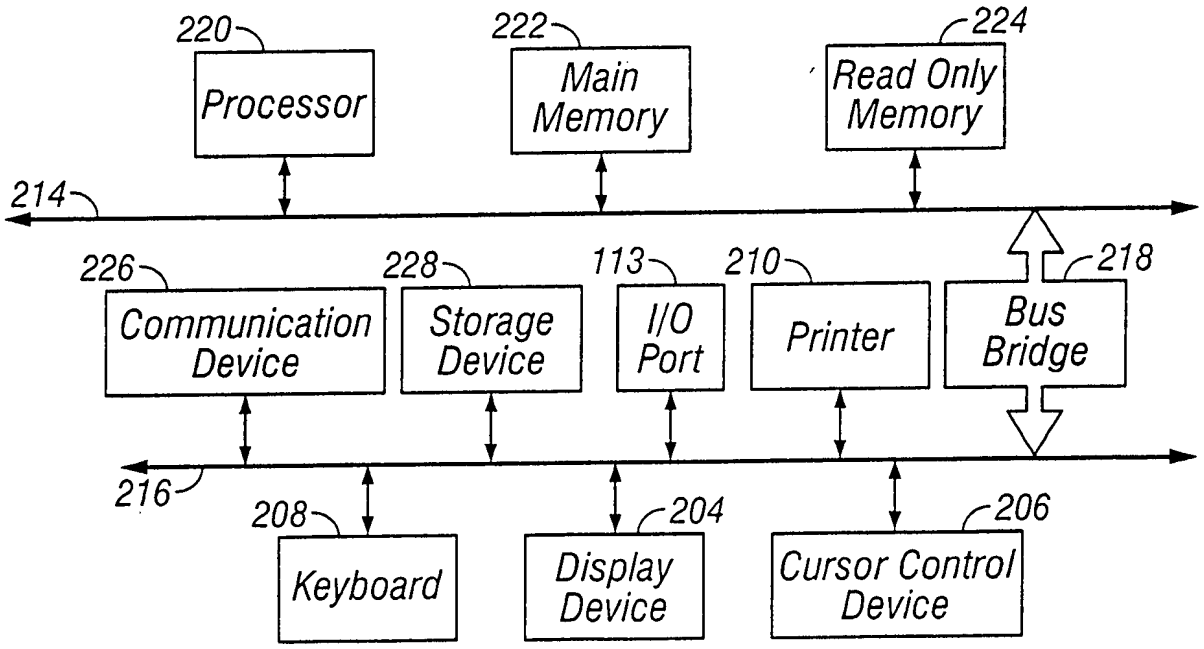
220
Processor
222
Main Memory
224
Read Only Memory
214
226
Communication Device
228
Storage Device
113
I/O Port
210
Printer
218
Bus Bridge
216
208
Keyboard
204
Display Device
206
Cursor Control Device

FIG. 2b

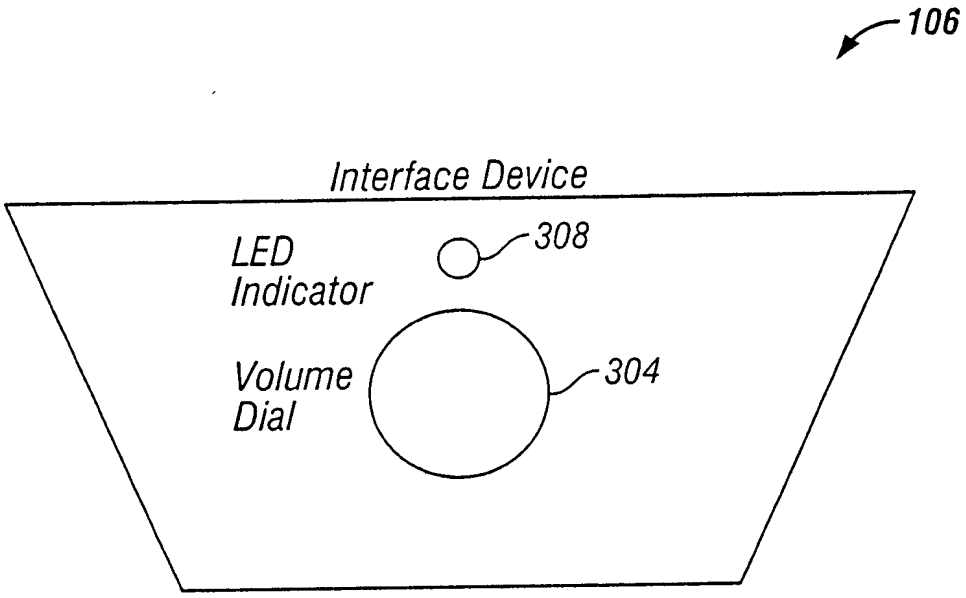

FIG. 3a

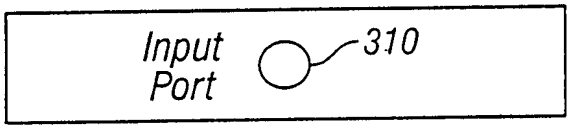

FIG. 3b

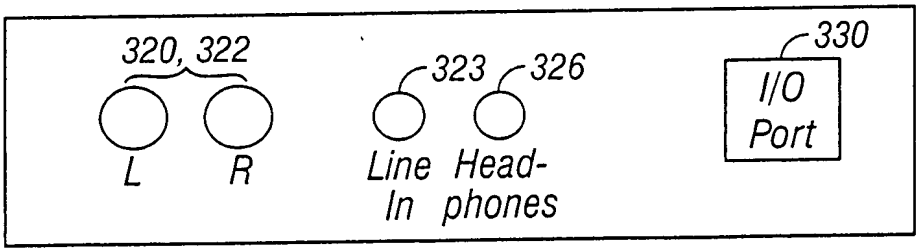

FIG. 3c

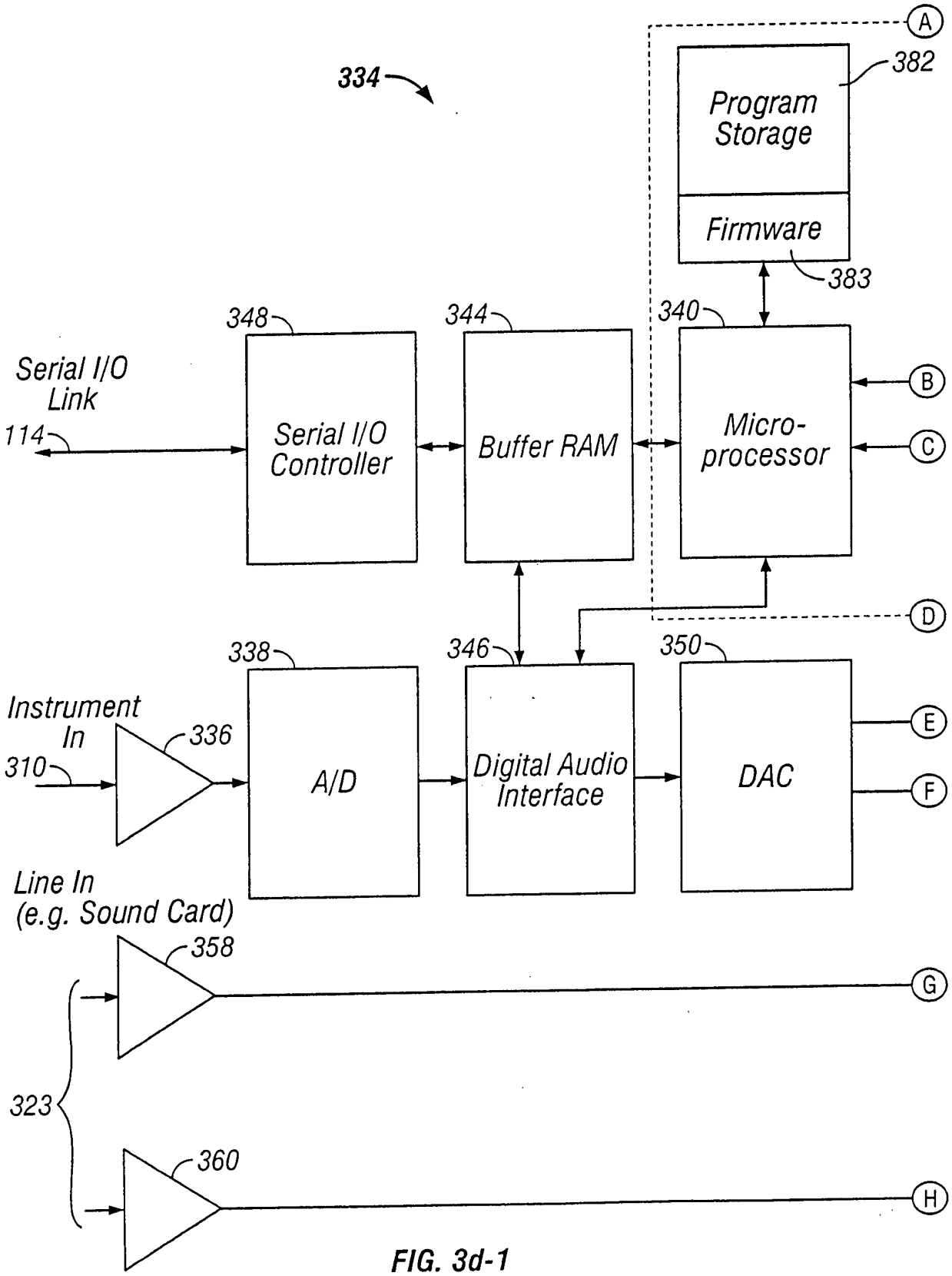
334
A
382
Program Storage
Firmware
383
340
348
344
Serial I/O Link
114
Serial I/O Controller
Buffer RAM
Micro-processor
B
C
D
338
346
350
Instrument In
310
336
A/D
Digital Audio Interface
DAC
E
F
Line In (e.g. Sound Card)
358
G
323
360
H

FIG. 3d-1

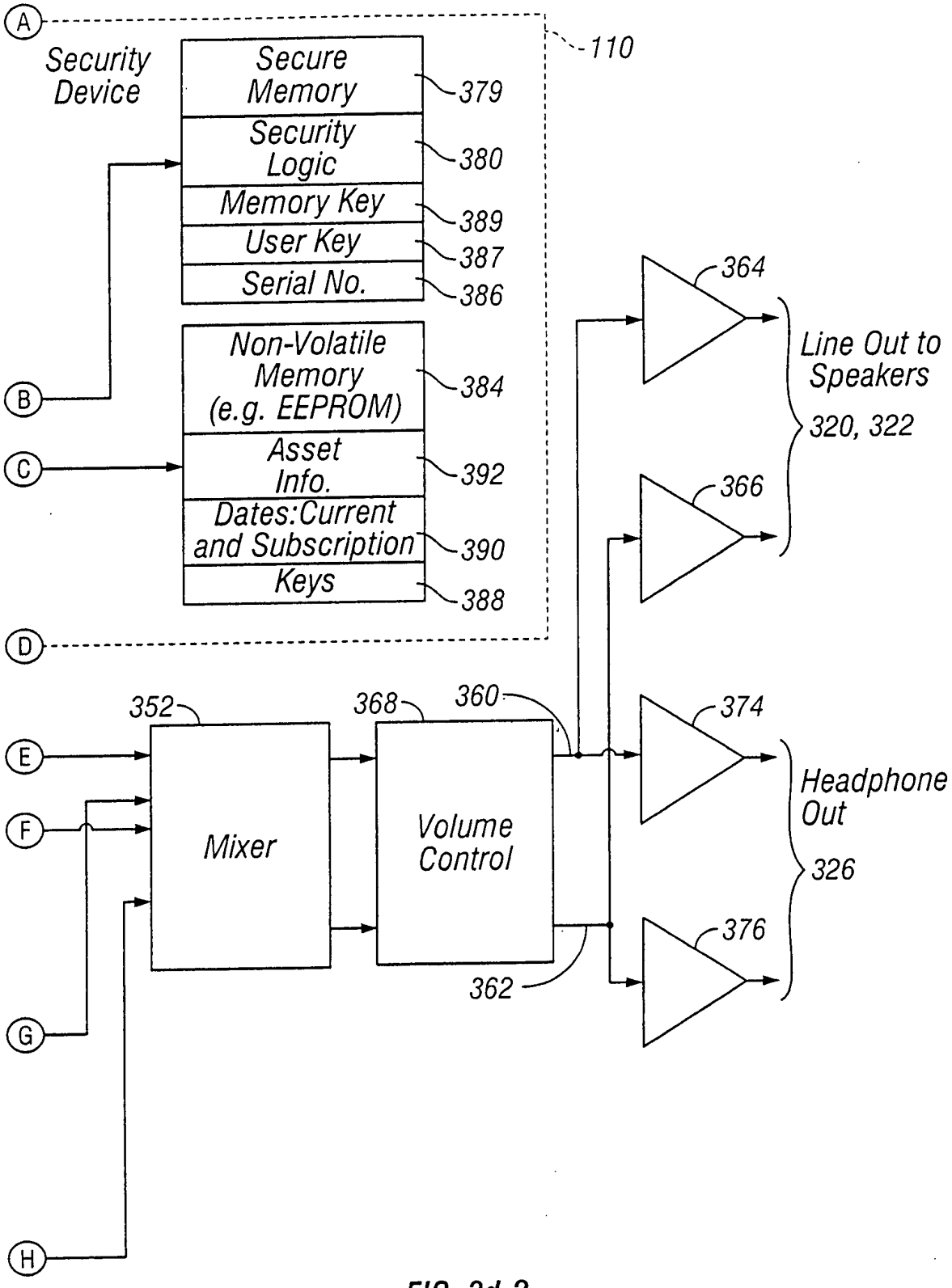
A
Security Device
Secure Memory
379
Security Logic
380
Memory Key
389
User Key
387
Serial No.
386
110
Non-Volatile Memory (e.g. EEPROM)
384
Asset Info.
392
Dates:Current and Subscription
390
Keys
388
B
C
D
364
366
Line Out to Speakers
320, 322
352
368
360
374
376
Headphone Out
326
362
E
F
G
H
Mixer
Volume Control

FIG. 3d-2

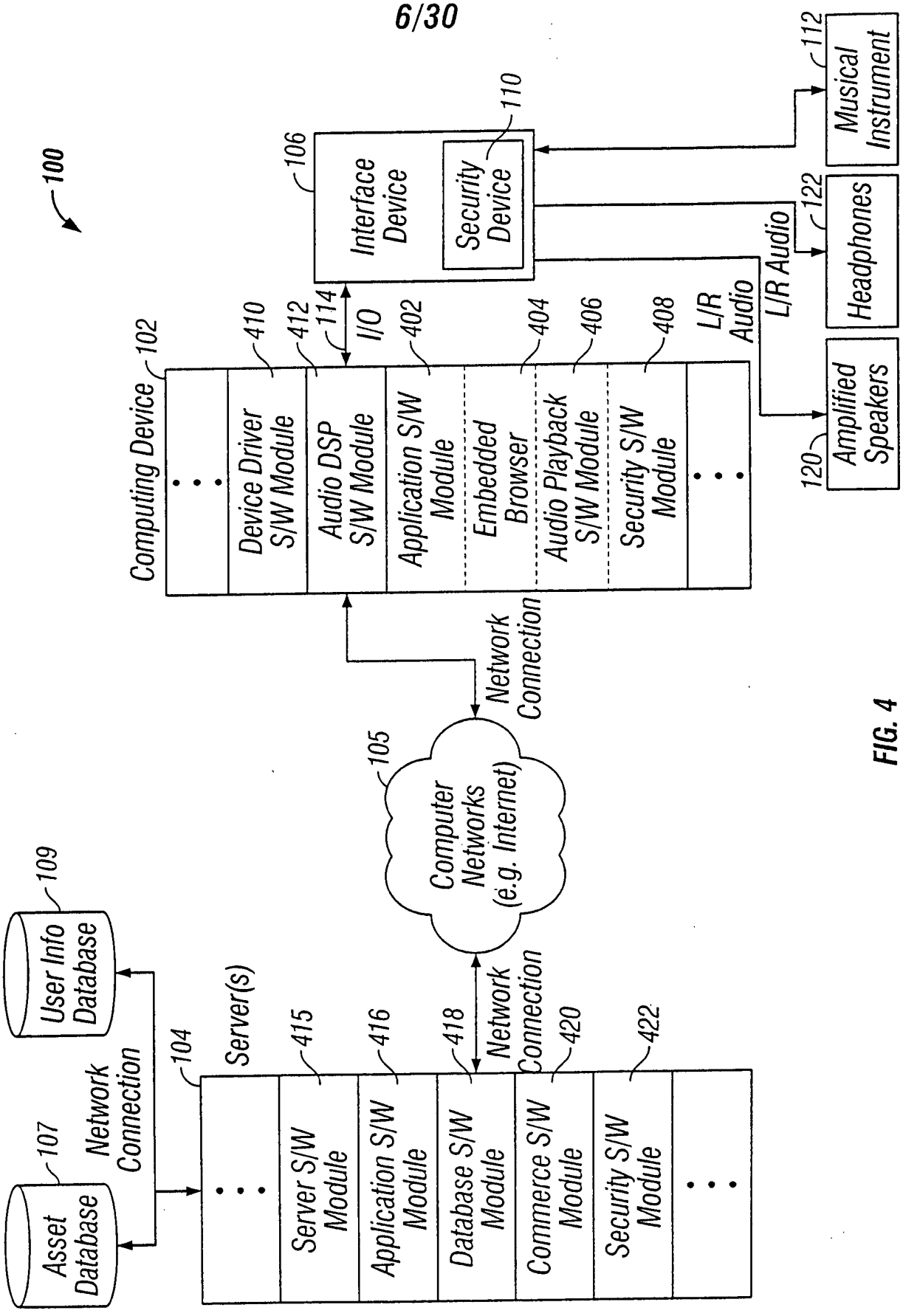
100
Computing Device
102
Device Driver S/W Module
Audio DSP S/W Module
Application S/W Module
Embedded Browser
Audio Playback S/W Module
Security S/W Module
410
412
114
I/O
402
404
406
408
L/R Audio
Interface Device
106
Security Device
110
Musical Instrument
112
Headphones
122
L/R Audio
Amplified Speakers
120
Network Connection
Computer Networks (e.g. Internet)
105
Network Connection
Server(s)
104
Server S/W Module
Application S/W Module
Database S/W Module
Commerce S/W Module
Security S/W Module
415
416
418
420
422
User Info Database
109
Asset Database
107
Network Connection

FIG. 4

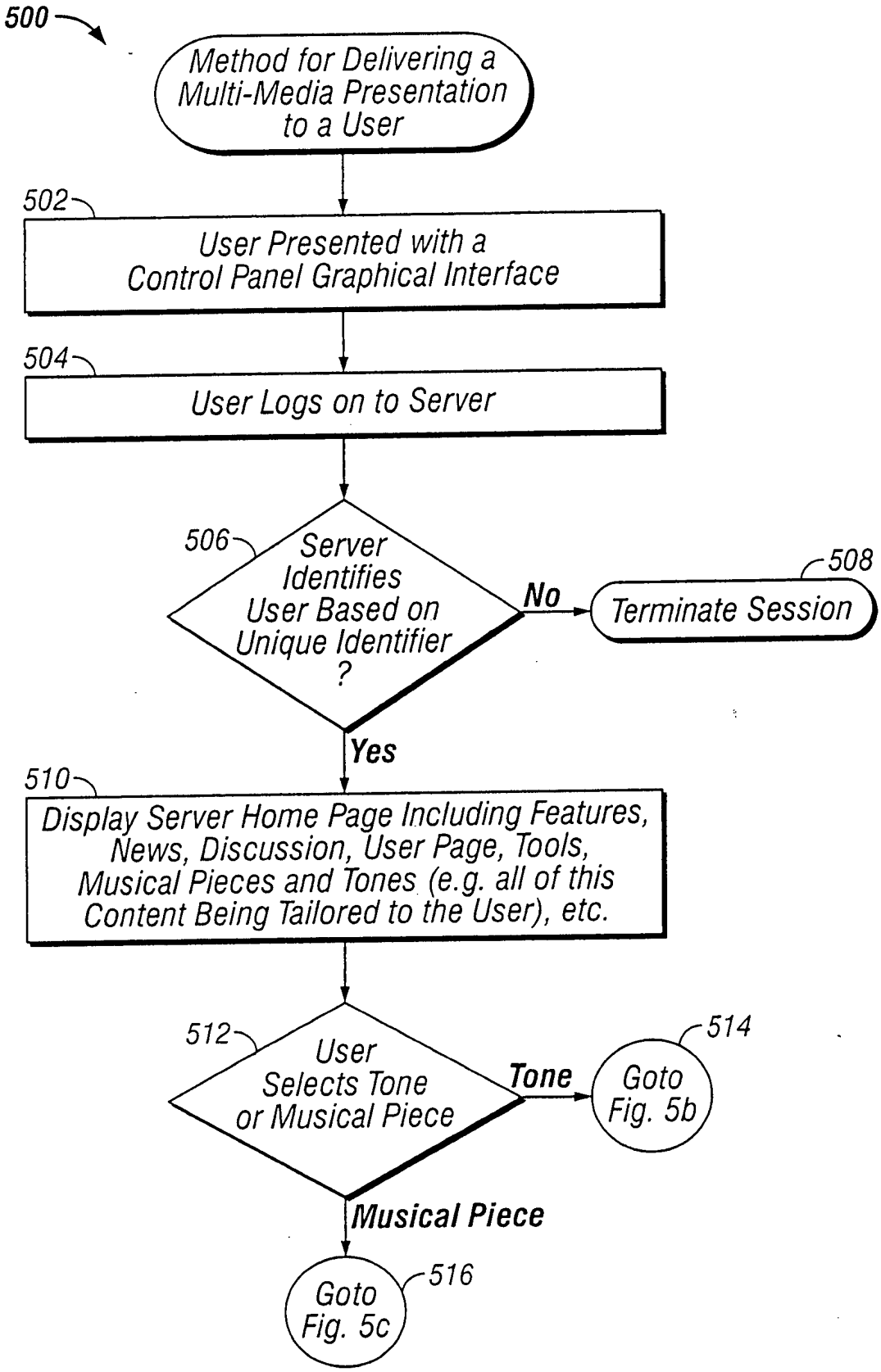
500
Method for Delivering a Multi-Media Presentation to a User
502
User Presented with a Control Panel Graphical Interface
504
User Logs on to Server
506
Server Identifies User Based on Unique Identifier ?
No
508
Terminate Session
Yes
510
Display Server Home Page Including Features, News, Discussion, User Page, Tools, Musical Pieces and Tones (e.g. all of this Content Being Tailored to the User), etc.
512
User Selects Tone or Musical Piece
Tone
514
Goto Fig. 5b
Musical Piece
516
Goto Fig. 5c

FIG. 5a

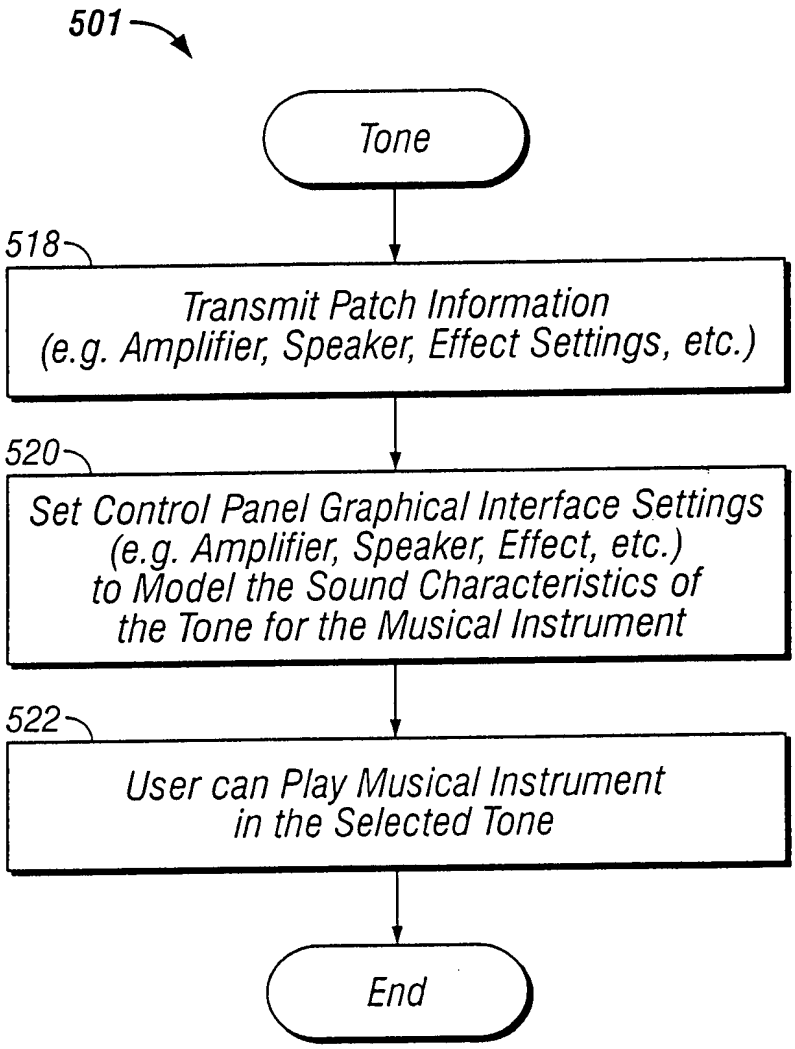
501
Tone
518
Transmit Patch Information
(e.g. Amplifier, Speaker, Effect Settings, etc.)
520
Set Control Panel Graphical Interface Settings
(e.g. Amplifier, Speaker, Effect, etc.)
to Model the Sound Characteristics of
the Tone for the Musical Instrument
522
User can Play Musical Instrument
in the Selected Tone
End

FIG. 5b

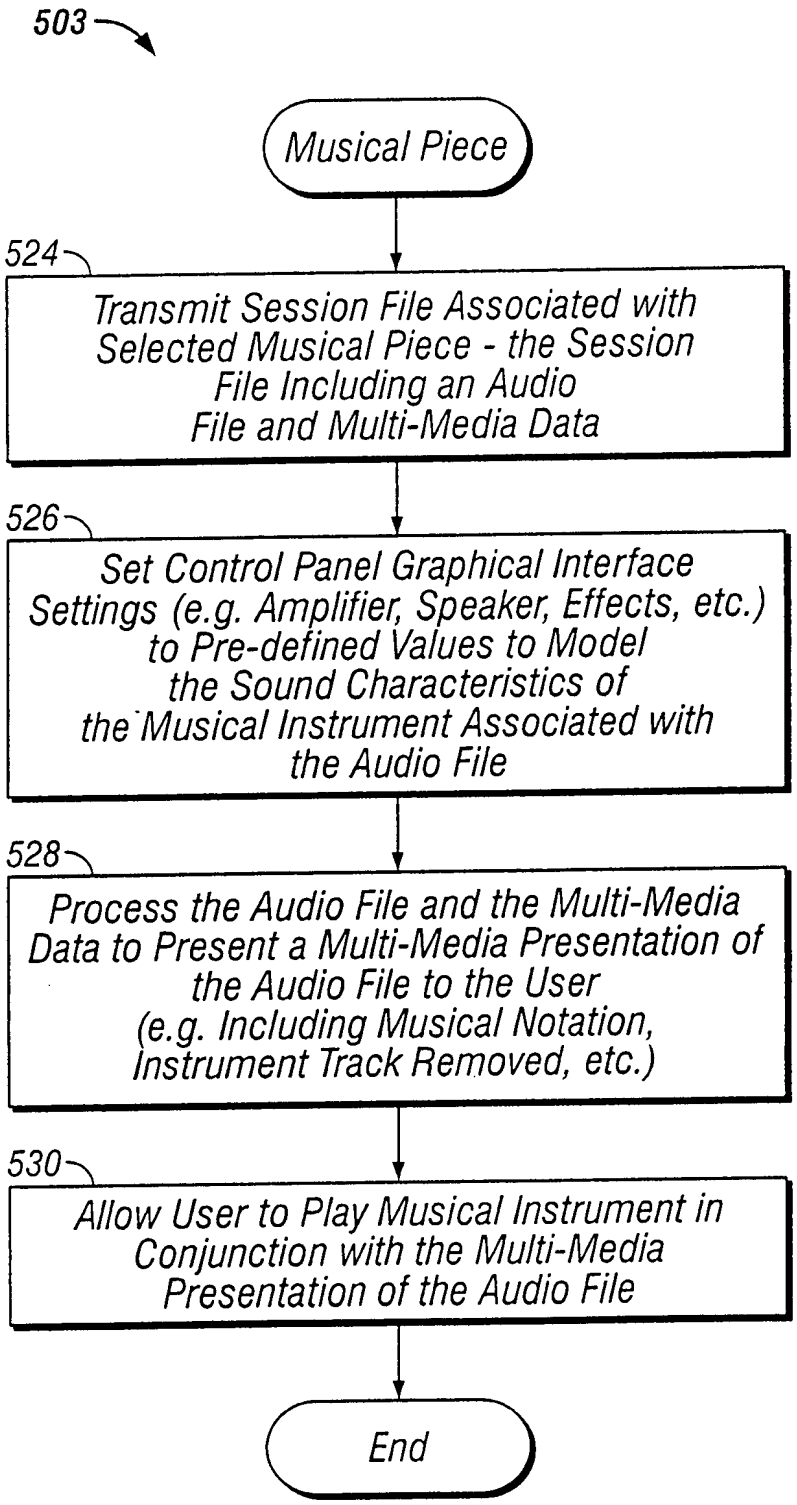
503
Musical Piece
524
Transmit Session File Associated with Selected Musical Piece - the Session File Including an Audio File and Multi-Media Data
526
Set Control Panel Graphical Interface Settings (e.g. Amplifier, Speaker, Effects, etc.) to Pre-defined Values to Model the Sound Characteristics of the Musical Instrument Associated with the Audio File
528
Process the Audio File and the Multi-Media Data to Present a Multi-Media Presentation of the Audio File to the User (e.g. Including Musical Notation, Instrument Track Removed, etc.)
530
Allow User to Play Musical Instrument in Conjunction with the Multi-Media Presentation of the Audio File
End

FIG. 5c

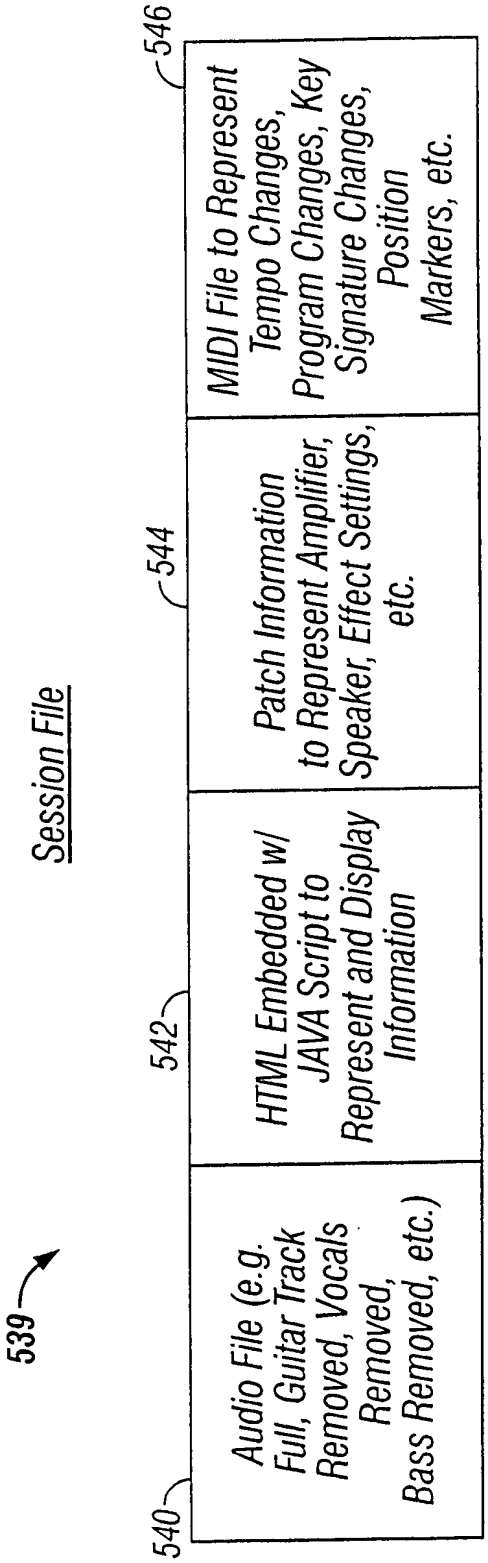
539
Session File
540
Audio File (e.g. Full, Guitar Track Removed, Vocals Removed, Bass Removed, etc.)
542
HTML Embedded w/ JAVA Script to Represent and Display Information
544
Patch Information to Represent Amplifier, Speaker, Effect Settings, etc.
546
MIDI File to Represent Tempo Changes, Program Changes, Key Signature Changes, Position Markers, etc.

FIG. 5d

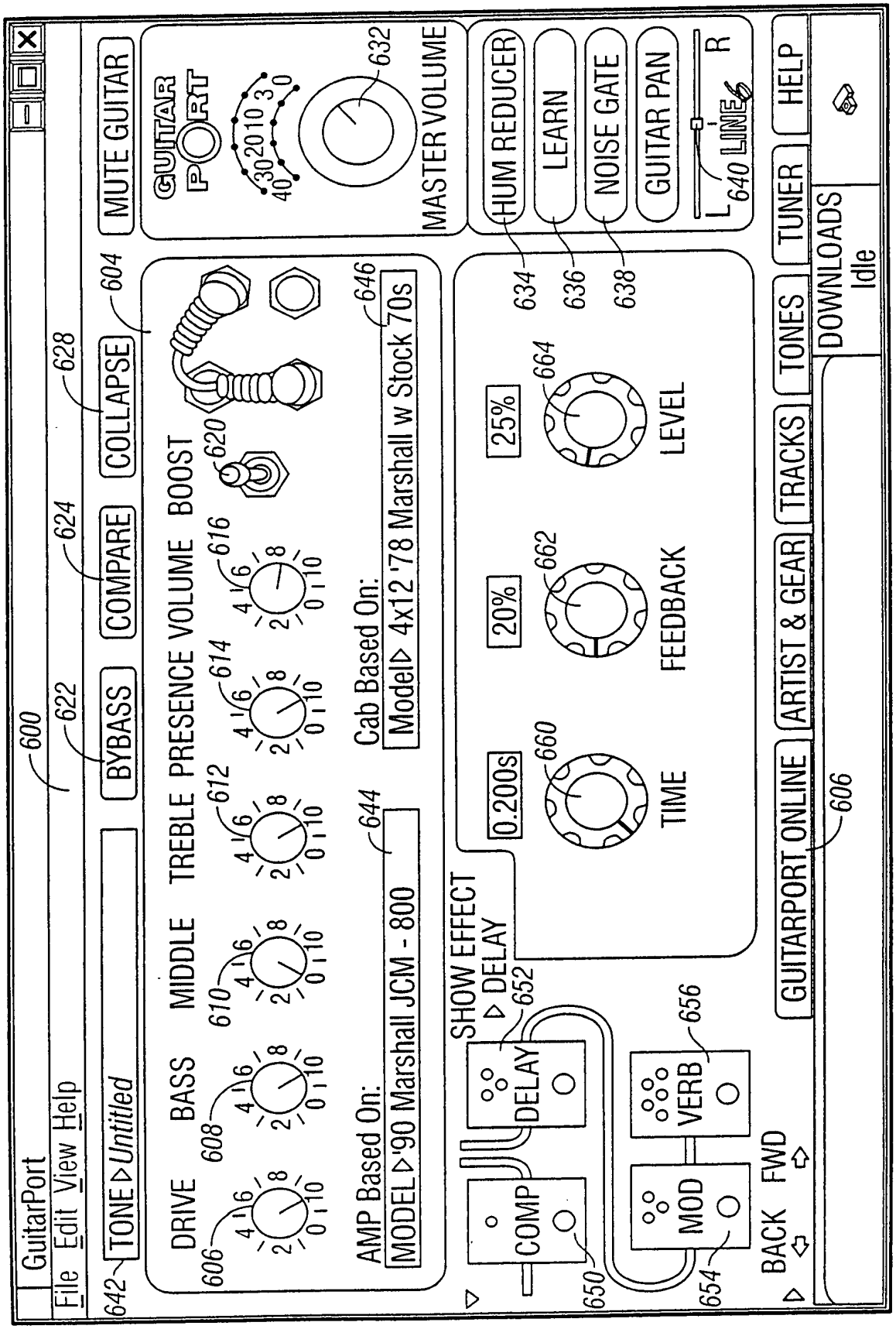
GuitarPort
File Edit View Help
600
622
628
624
642
TONE ▷ Untitled
BYBASS
COMPARE
COLLAPSE
604
MUTE GUITAR
GUITAR PORT
632
MASTER VOLUME
DRIVE
BASS
MIDDLE
TREBLE
PRESENCE
VOLUME
BOOST
606
608
610
612
614
616
620
AMP Based On:
MODEL ▷ '90 Marshall JCM - 800
644
Cab Based On:
Model ▷ 4x12 '78 Marshall w Stock 70s
646
HUM REDUCER
LEARN
NOISE GATE
GUITAR PAN
L
R
LINE 6
640
634
636
638
SHOW EFFECT
DELAY
0.200s
20%
25%
660
662
664
TIME
FEEDBACK
LEVEL
652
650
656
654
COMP
DELAY
MOD
VERB
BACK
FWD
GUITARPORT ONLINE
ARTIST & GEAR
TRACKS
TONES
TUNER
HELP
606
DOWNLOADS
Idle

FIG. 6a

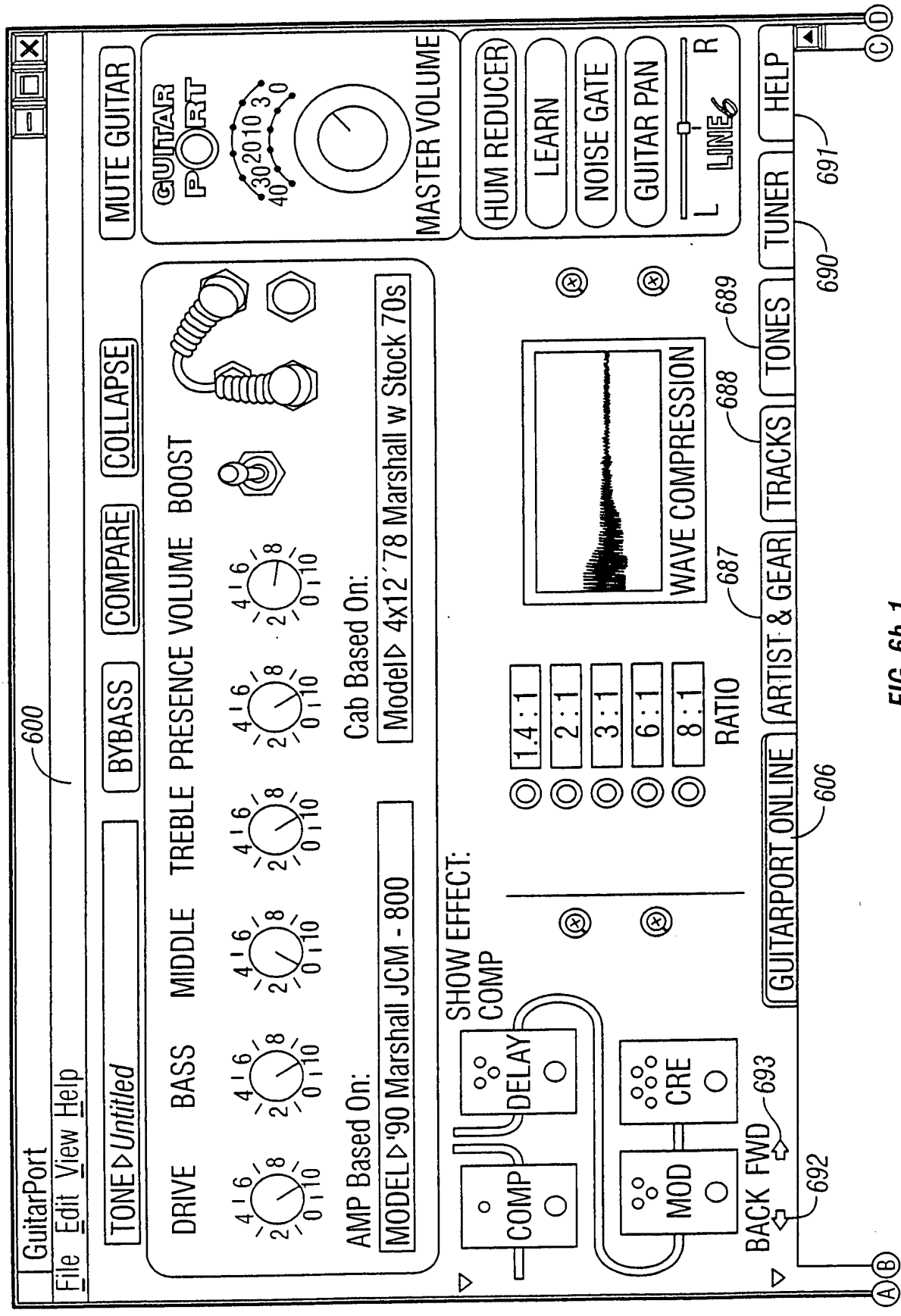
GuitarPort
File Edit View Help
600
TONE▷Untitled
BYBASS
COMPARE
COLLAPSE
MUTE GUITAR
GUITAR PORT
MASTER VOLUME
HUM REDUCER
LEARN
NOISE GATE
GUITAR PAN
L LINE6 R
DRIVE BASS MIDDLE TREBLE PRESENCE VOLUME BOOST
AMP Based On:
MODEL▷'90 Marshall JCM - 800
Cab Based On:
Model▷ 4x12 '78 Marshall w Stock 70s
SHOW EFFECT:
COMP
DELAY
MOD
CRE
1.4 : 1
2 : 1
3 : 1
6 : 1
8 : 1
RATIO
687
WAVE COMPRESSION
688
689
690
691
TUNER
HELP
TONES
TRACKS
ARTIST & GEAR
GUITARPORT ONLINE
606
BACK FWD
693
692
A
B
C
D

FIG. 6b-1

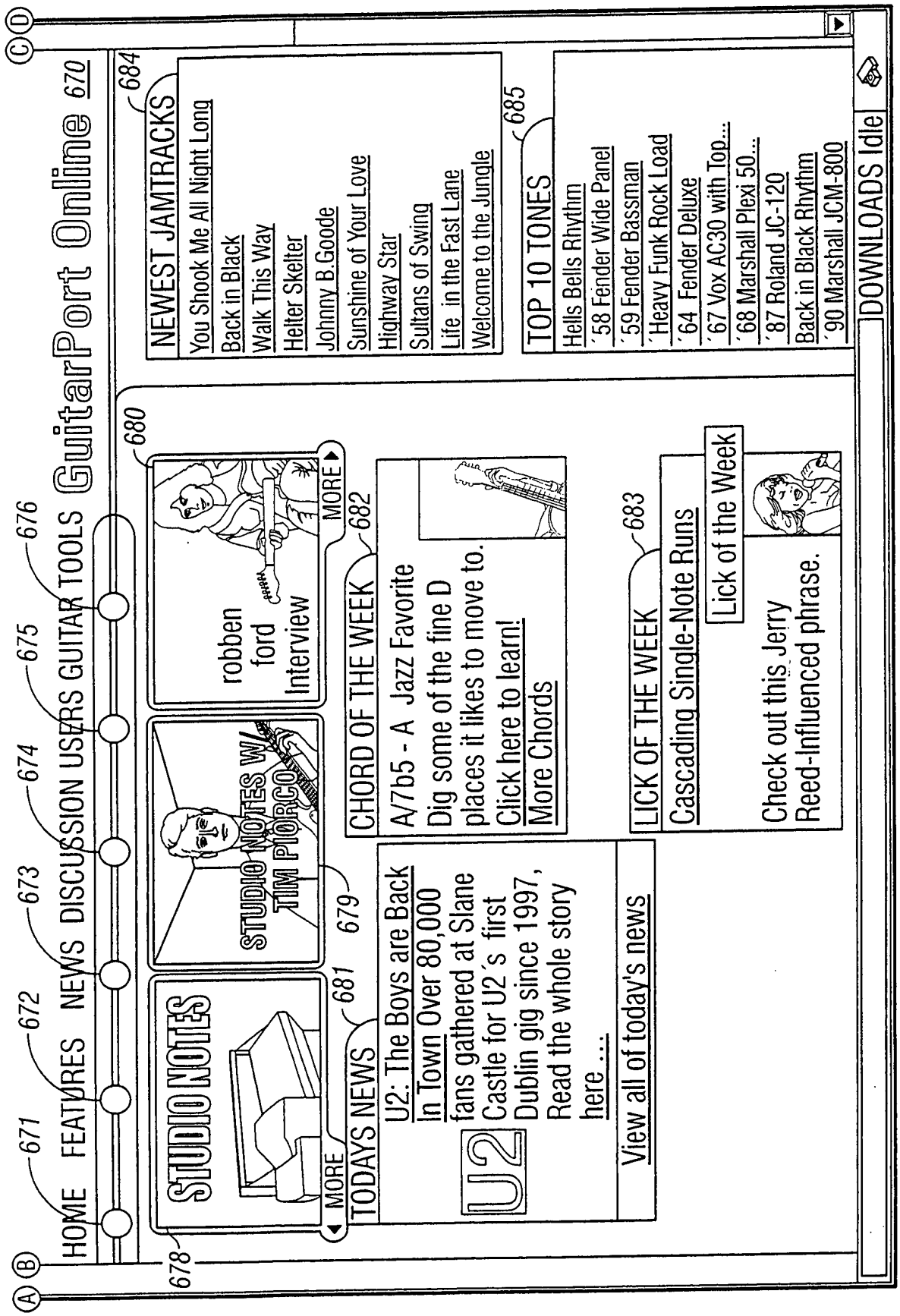
GuitarPort Online 670
HOME 671
FEATURES 672
NEWS 673
DISCUSSION USERS 674
GUITAR TOOLS 675
676
STUDIO NOTES
MORE
TODAYS NEWS 681
U2: The Boys are Back In Town Over 80,000 fans gathered at Slane Castle for U2's first Dublin gig since 1997, Read the whole story here ...
View all of today's news
678
STUDIO NOTES W/ TIM PIORCO 679
680
robben ford Interview
MORE
CHORD OF THE WEEK 682
A/7b5 - A Jazz Favorite
Dig some of the fine D places it likes to move to.
Click here to learn!
More Chords
LICK OF THE WEEK 683
Cascading Single-Note Runs
Lick of the Week
Check out this Jerry Reed-Influenced phrase.
NEWEST JAMTRACKS 684
You Shook Me All Night Long
Back in Black
Walk This Way
Helter Skelter
Johnny B.Goode
Sunshine of Your Love
Highway Star
Sultans of Swing
Life in the Fast Lane
Welcome to the Jungle
TOP 10 TONES 685
Hells Bells Rhythm
'58 Fender Wide Panel
'59 Fender Bassman
'Heavy Funk Rock Load
'64 Fender Deluxe
'67 Vox AC30 with Top...
'68 Marshall Plexi 50...
'87 Roland JC-120
Back in Black Rhythm
'90 Marshall JCM-800
DOWNLOADS Idle
A
B
C
D

FIG. 6b-2

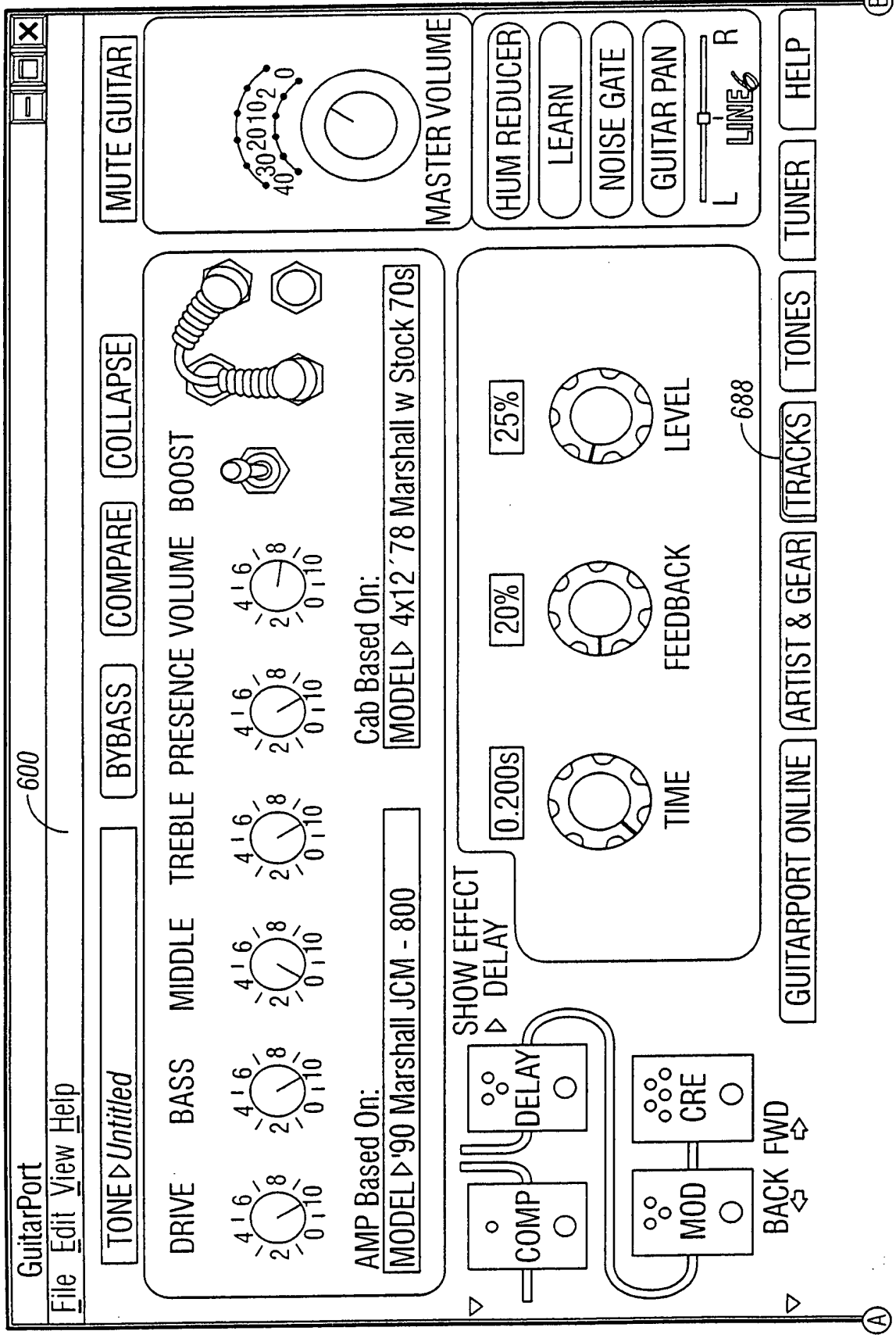
GuitarPort
File Edit View Help
600
TONE▷Untitled
BYBASS
COMPARE
COLLAPSE
MUTE GUITAR
DRIVE
BASS
MIDDLE
TREBLE
PRESENCE
VOLUME
BOOST
AMP Based On:
MODEL▷'90 Marshall JCM - 800
Cab Based On:
MODEL▷ 4x12 '78 Marshall w Stock 70s
MASTER VOLUME
HUM REDUCER
LEARN
NOISE GATE
GUITAR PAN
L
LINE
R
SHOW EFFECT
▷ DELAY
0.200s
20%
25%
TIME
FEEDBACK
LEVEL
688
COMP
DELAY
MOD
CRE
BACK
FWD
GUITARPORT ONLINE
ARTIST & GEAR
TRACKS
TONES
TUNER
HELP
A
B

FIG. 6c-1

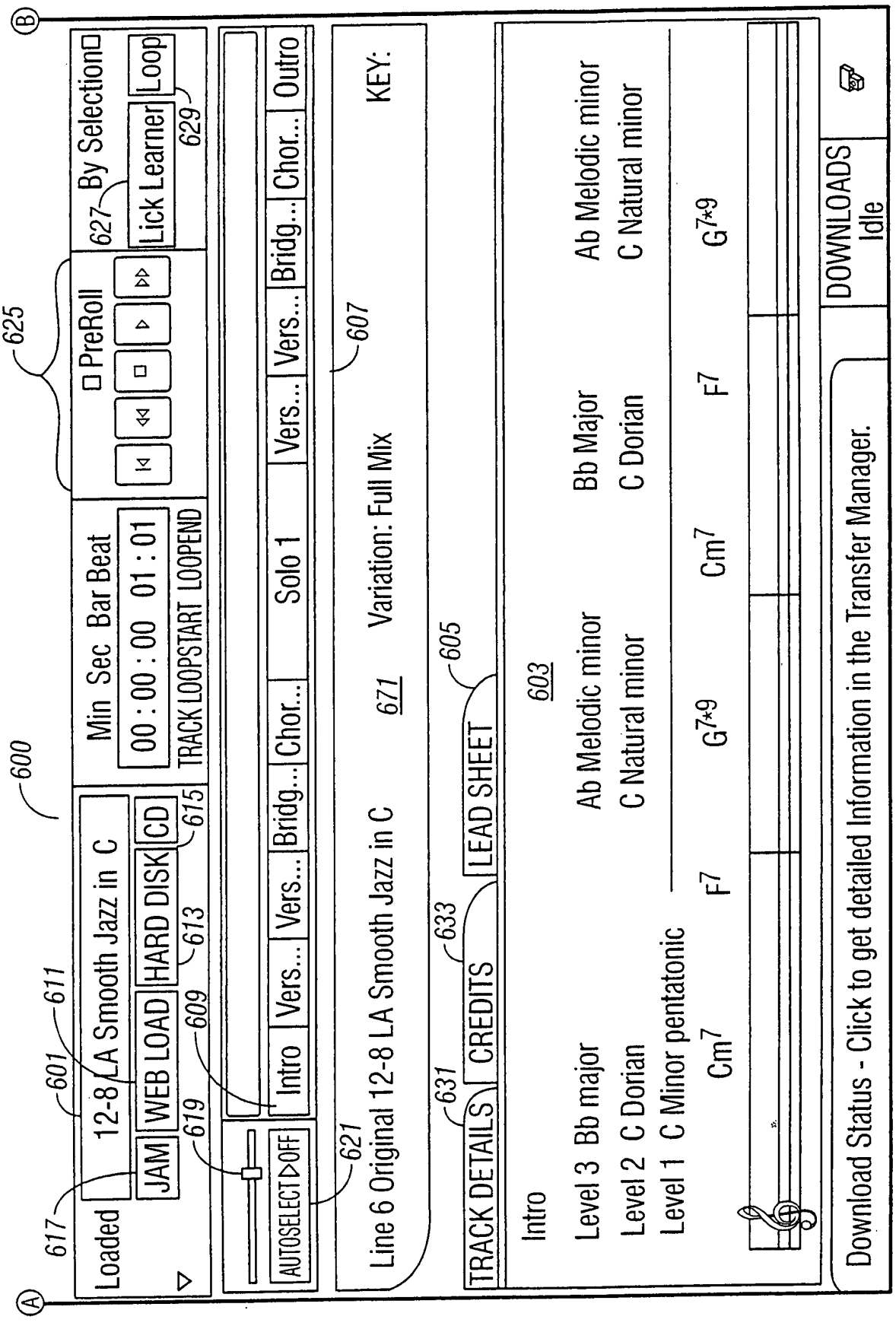
600
625
PreRoll
Min Sec Bar Beat
00 : 00 : 00 01 : 01
TRACK LOOPSTART LOOPEND
627
By Selection
Lick Learner
Loop
629
Loaded
12-8 LA Smooth Jazz in C
JAM
WEB LOAD
HARD DISK
CD
615
613
609
611
601
619
617
AUTOSELECT OFF
Intro
Vers...
Vers...
Bridg...
Chor...
Solo 1
Vers...
Vers...
Bridg...
Chor...
Outro
621
Line 6 Original 12-8 LA Smooth Jazz in C
671
Variation: Full Mix
607
KEY:
TRACK DETAILS
631
CREDITS
633
LEAD SHEET
605
603
Intro
Level 3 Bb major
Level 2 C Dorian
Level 1 C Minor pentatonic
Cm7
F7
G7*9
Ab Melodic minor
C Natural minor
Cm7
F7
Bb Major
C Dorian
G7*9
Ab Melodic minor
C Natural minor
DOWNLOADS
Idle
Download Status - Click to get detailed Information in the Transfer Manager.
A
B

FIG. 6c-2

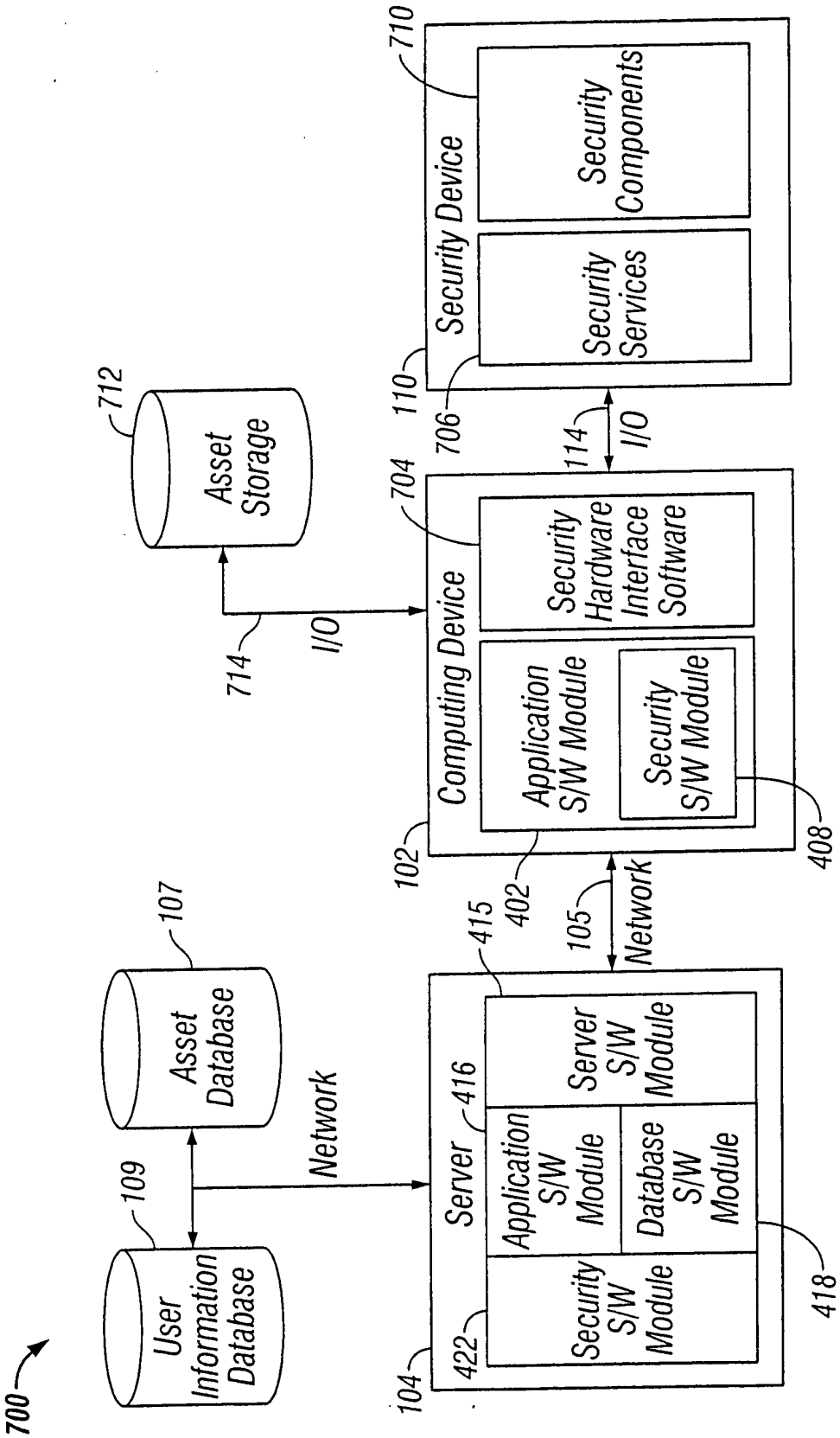
700
User Information Database
109
Asset Database
107
Network
Server
416
Application S/W Module
Database S/W Module
Server S/W Module
Security S/W Module
422
418
104
415
105
Network
Computing Device
102
Application S/W Module
Security S/W Module
408
402
Security Hardware Interface Software
704
714
I/O
Asset Storage
712
Security Device
710
Security Components
Security Services
706
110
114
I/O

FIG. 7a

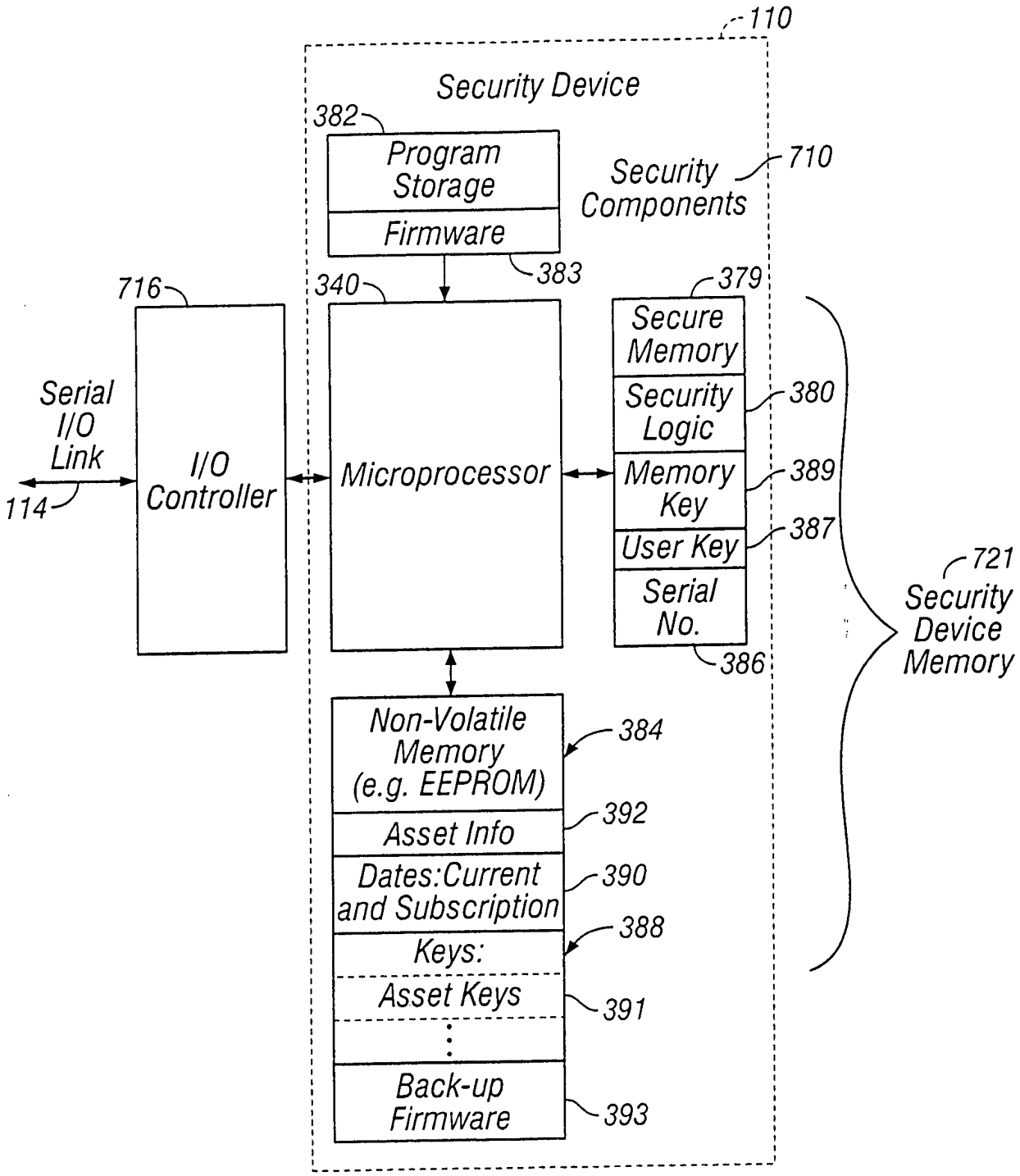
110
Security Device
382
Program Storage
Firmware
383
Security Components
710
716
340
379
Secure Memory
Security Logic
380
Memory Key
389
User Key
387
Serial No.
386
721
Security Device Memory
Serial I/O Link
114
I/O Controller
Microprocessor
Non-Volatile Memory (e.g. EEPROM)
384
Asset Info
392
Dates:Current and Subscription
390
Keys:
388
Asset Keys
391
Back-up Firmware
393

FIG. 7b

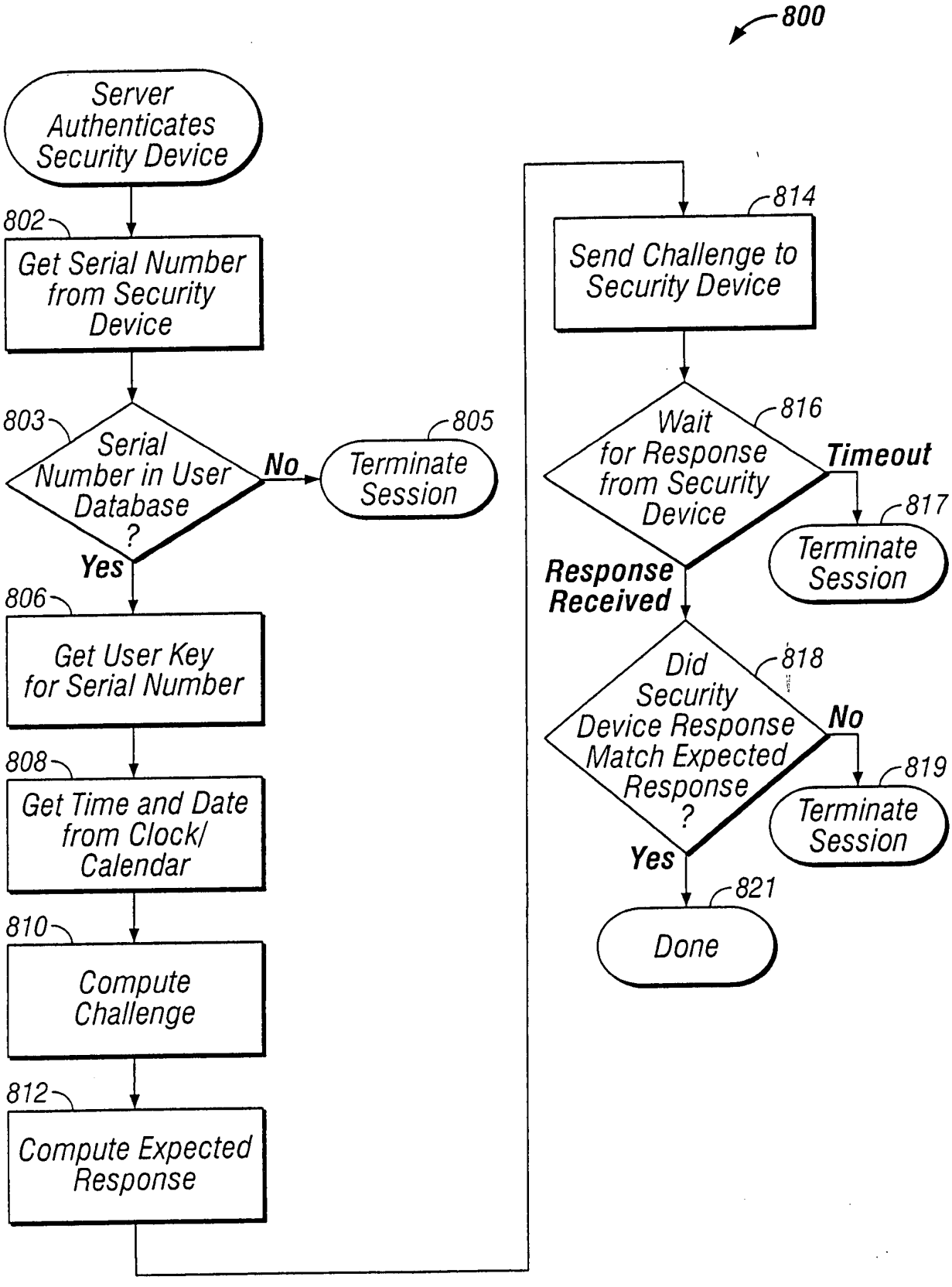
800
Server Authenticates Security Device
802
Get Serial Number from Security Device
803
Serial Number in User Database ?
No
805
Terminate Session
Yes
806
Get User Key for Serial Number
808
Get Time and Date from Clock/ Calendar
810
Compute Challenge
812
Compute Expected Response
814
Send Challenge to Security Device
816
Wait for Response from Security Device
Timeout
817
Terminate Session
Response Received
818
Did Security Device Response Match Expected Response ?
No
819
Terminate Session
Yes
821
Done

FIG. 8a

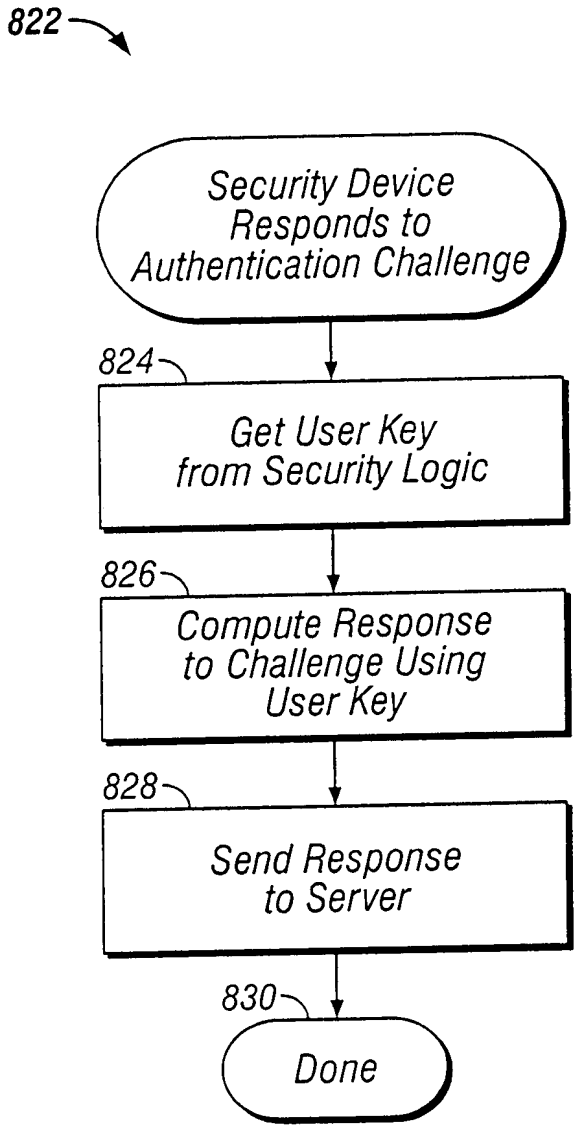
822
Security Device Responds to Authentication Challenge
824
Get User Key from Security Logic
826
Compute Response to Challenge Using User Key
828
Send Response to Server
830
Done

FIG. 8b

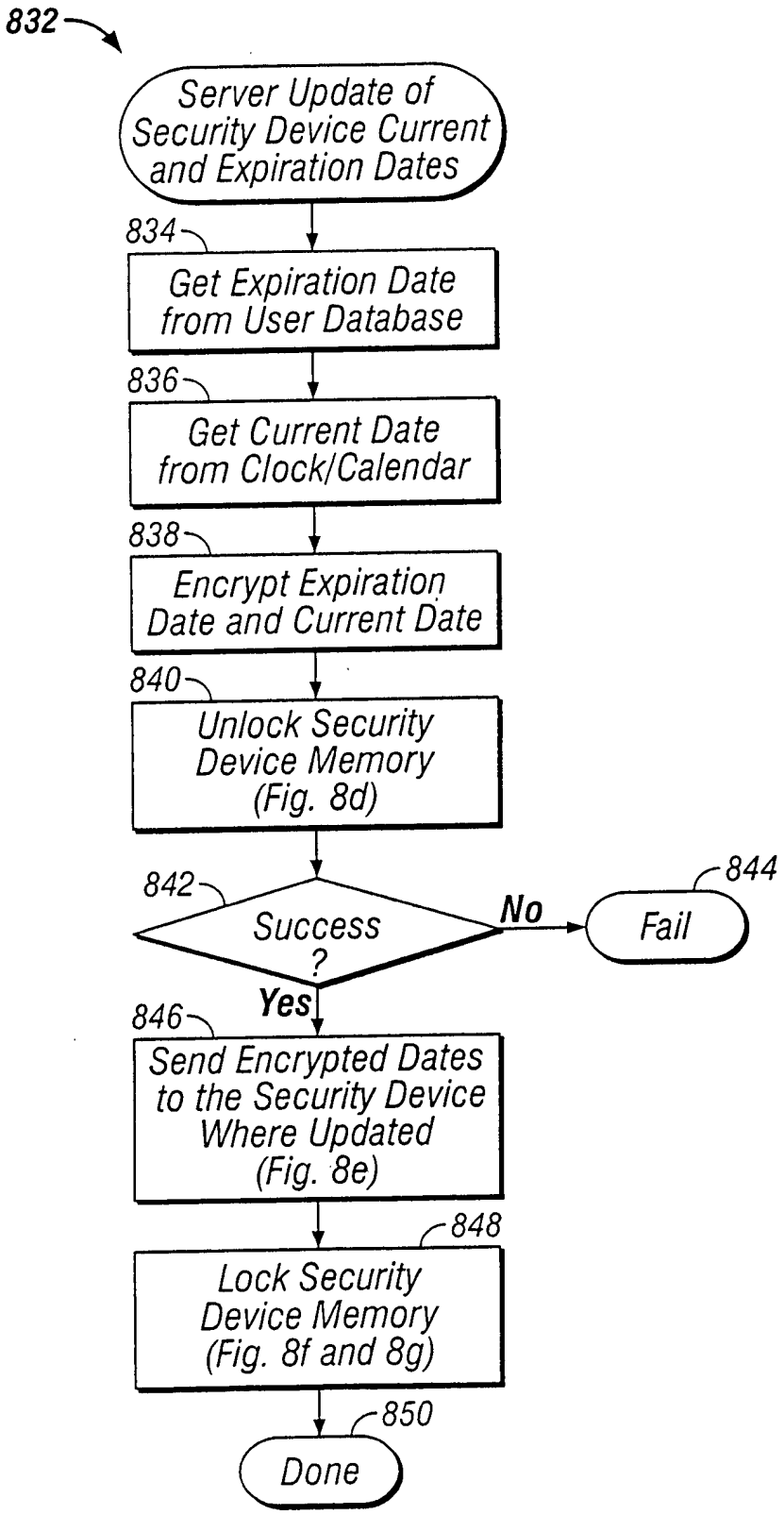
832
Server Update of Security Device Current and Expiration Dates
834
Get Expiration Date from User Database
836
Get Current Date from Clock/Calendar
838
Encrypt Expiration Date and Current Date
840
Unlock Security Device Memory (Fig. 8d)
842
Success ?
No
844
Fail
Yes
846
Send Encrypted Dates to the Security Device Where Updated (Fig. 8e)
848
Lock Security Device Memory (Fig. 8f and 8g)
850
Done

FIG. 8c

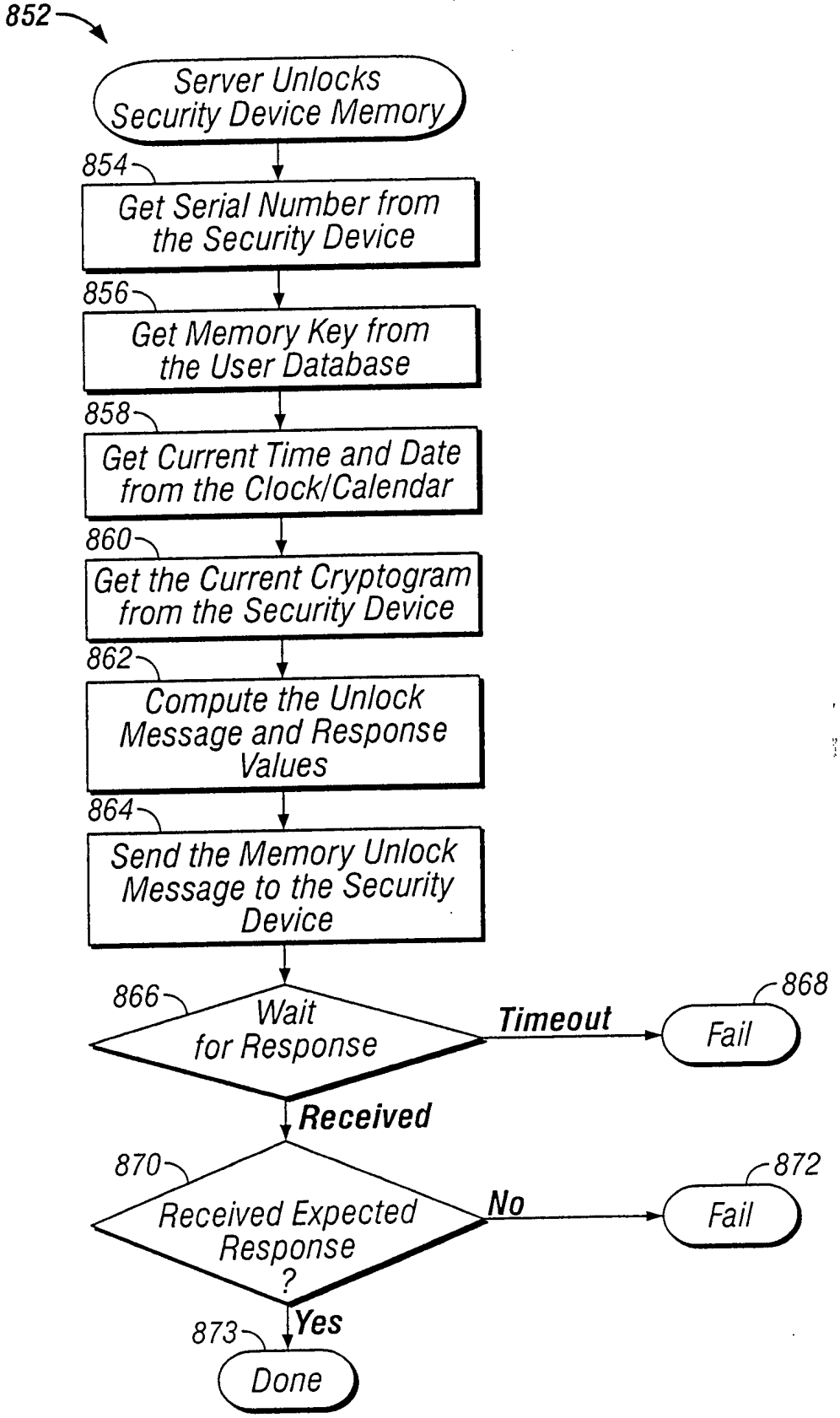
852
Server Unlocks Security Device Memory
854
Get Serial Number from the Security Device
856
Get Memory Key from the User Database
858
Get Current Time and Date from the Clock/Calendar
860
Get the Current Cryptogram from the Security Device
862
Compute the Unlock Message and Response Values
864
Send the Memory Unlock Message to the Security Device
866
Wait for Response
Timeout
868
Fail
Received
870
Received Expected Response ?
No
872
Fail
Yes
873
Done

FIG. 8d

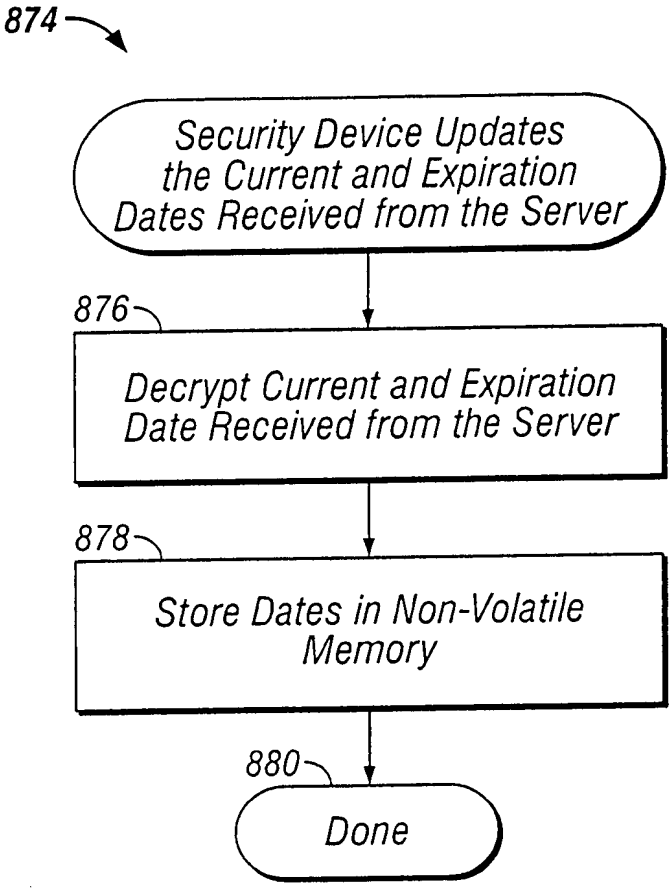
874
Security Device Updates the Current and Expiration Dates Received from the Server
876
Decrypt Current and Expiration Date Received from the Server
878
Store Dates in Non-Volatile Memory
880
Done

FIG. 8e

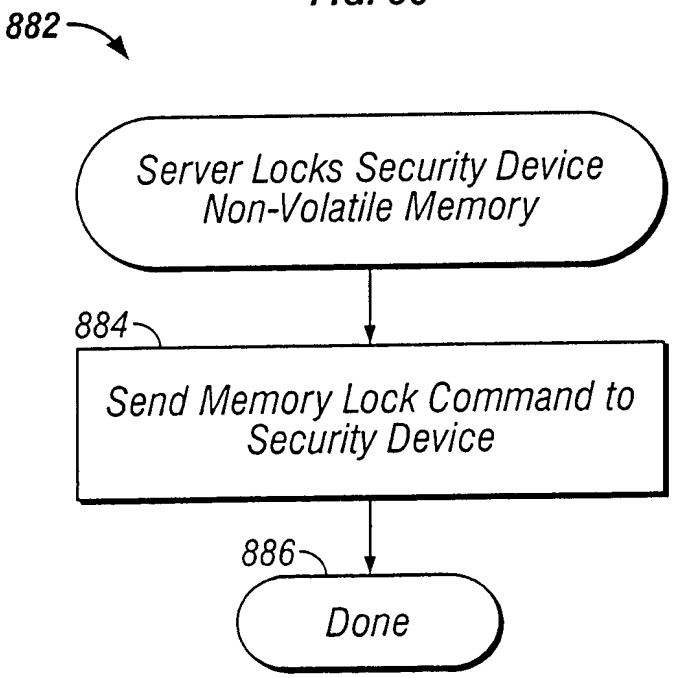
882
Server Locks Security Device Non-Volatile Memory
884
Send Memory Lock Command to Security Device
886
Done

FIG. 8f

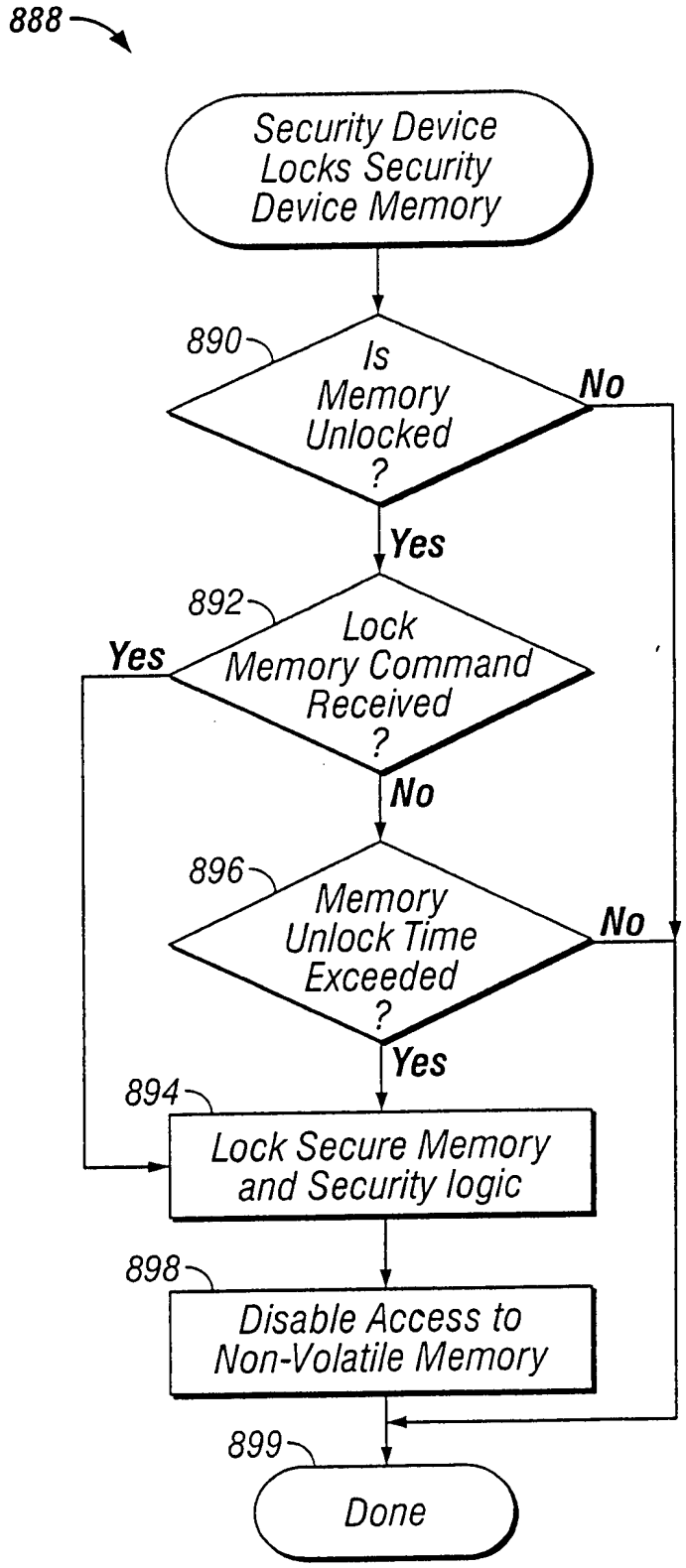
888
Security Device Locks Security Device Memory
890
Is Memory Unlocked ?
No
Yes
892
Lock Memory Command Received ?
Yes
No
896
Memory Unlock Time Exceeded ?
No
Yes
894
Lock Secure Memory and Security logic
898
Disable Access to Non-Volatile Memory
899
Done

FIG. 8g

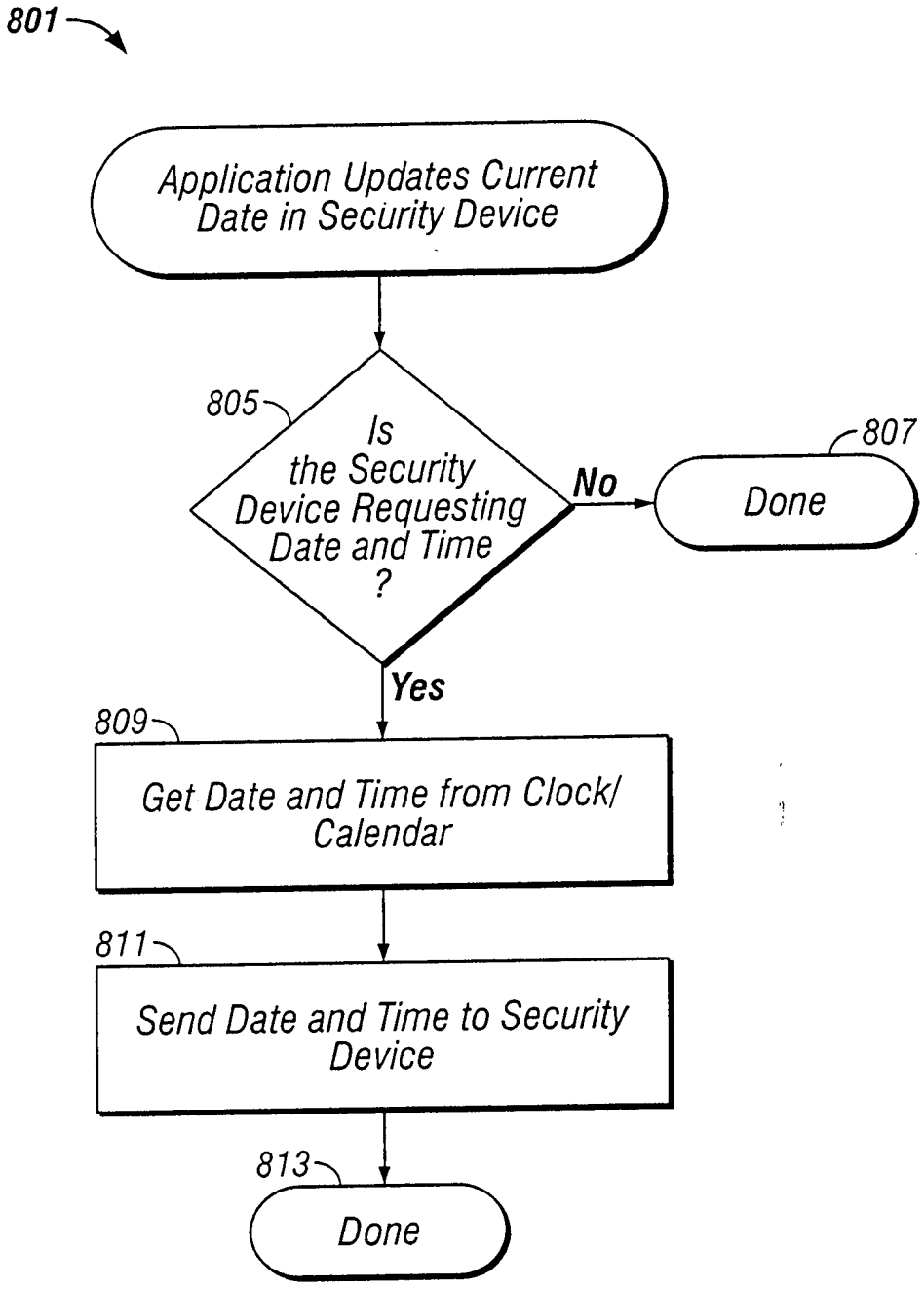
801
Application Updates Current Date in Security Device
805
Is the Security Device Requesting Date and Time ?
No
807
Done
Yes
809
Get Date and Time from Clock/ Calendar
811
Send Date and Time to Security Device
813
Done

FIG. 8h

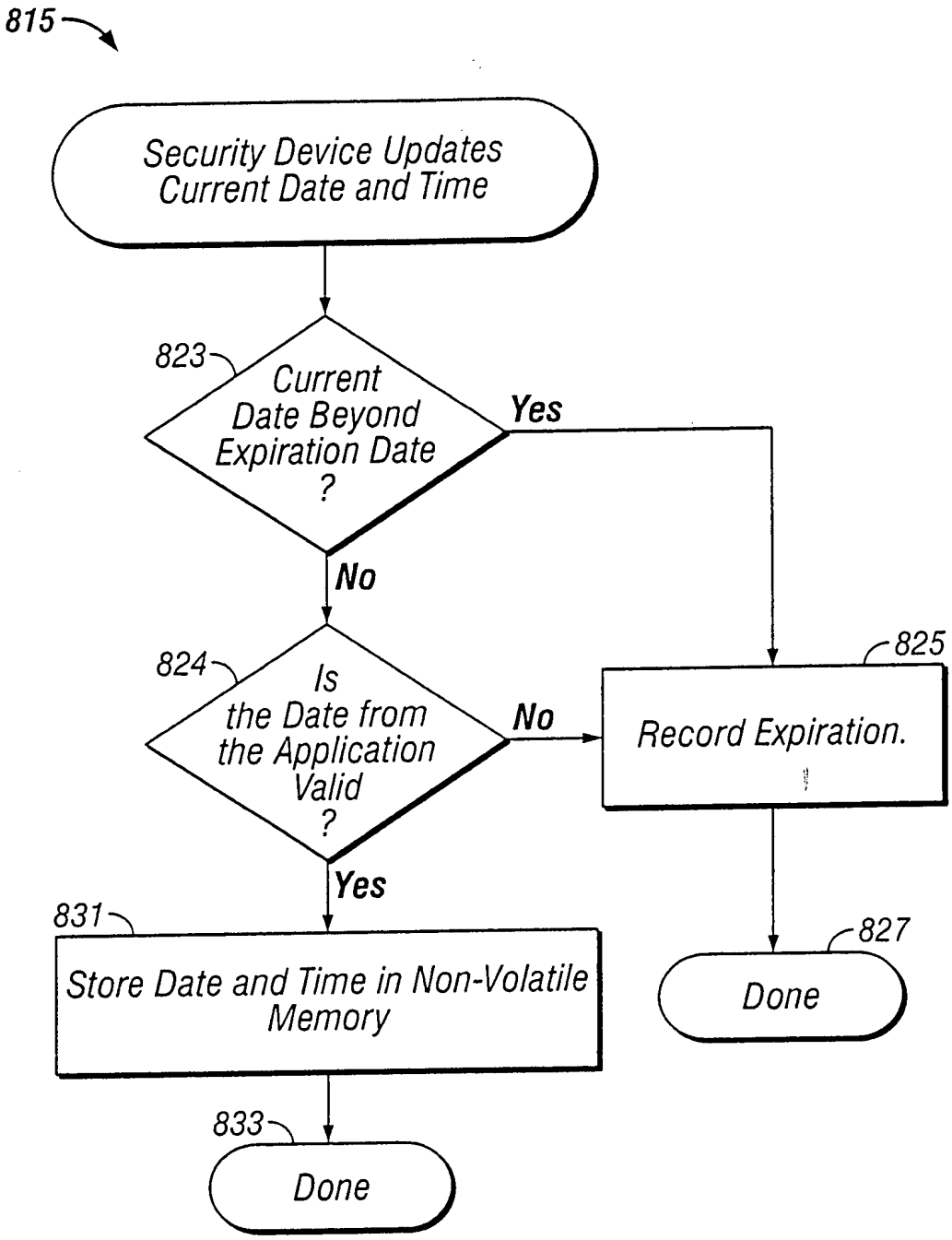
815
Security Device Updates Current Date and Time
823
Current Date Beyond Expiration Date ?
Yes
No
824
Is the Date from the Application Valid ?
No
825
Record Expiration.
Yes
831
Store Date and Time in Non-Volatile Memory
827
Done
833
Done

FIG. 8i

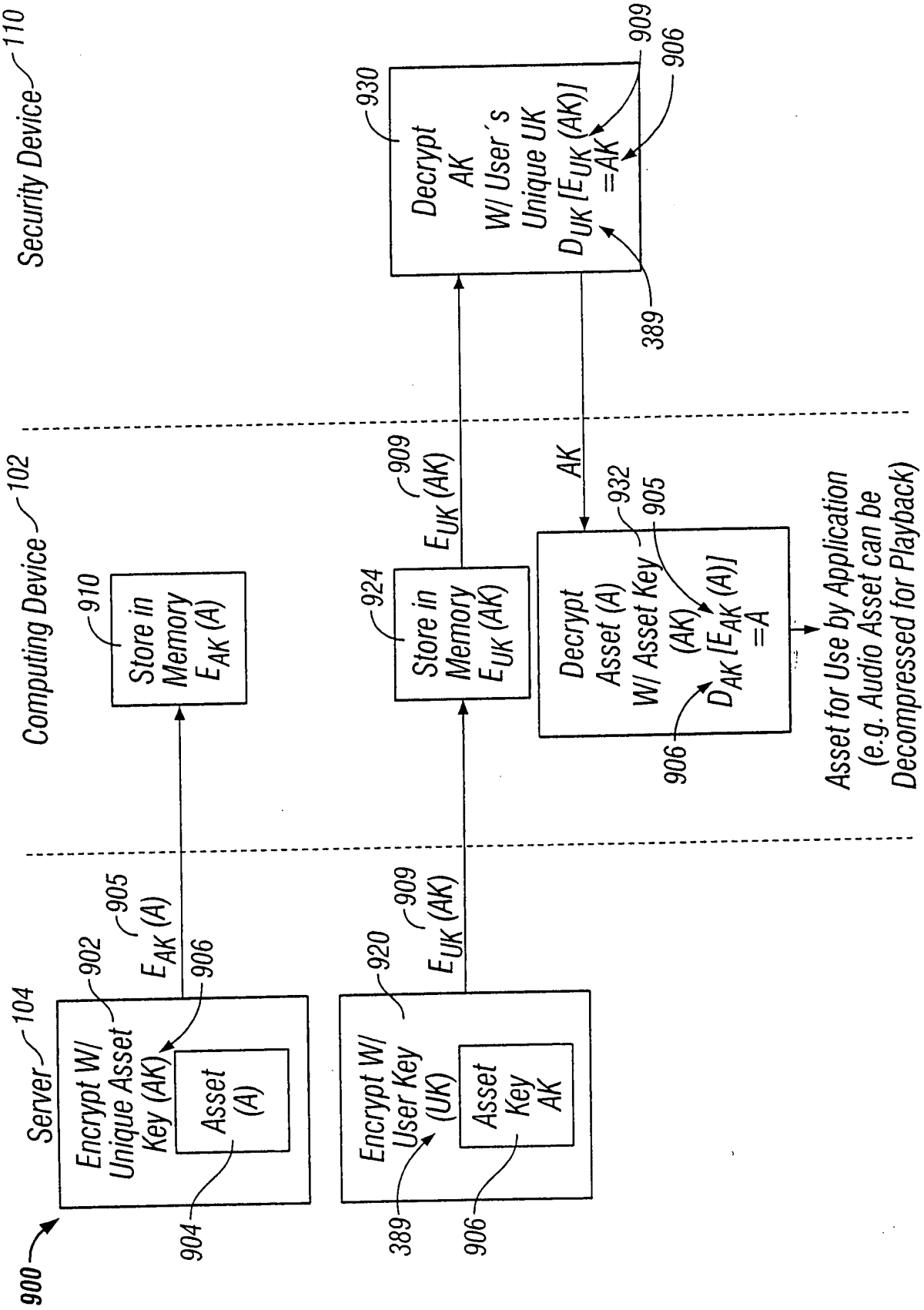
Security Device 110
Computing Device 102
Server 104
900
Encrypt W/ Unique Asset Key (AK)
Asset (A)
902
904
905
E_{AK} (A)
906
Encrypt W/ User Key (UK)
Asset Key AK
920
389
906
909
E_{UK} (AK)
Store in Memory E_{AK} (A)
910
Store in Memory E_{UK} (AK)
924
Decrypt AK W/ User's Unique UK D_{UK} [E_{UK} (AK)] =AK
930
909
906
389
AK
Decrypt Asset (A) W/ Asset Key (AK) D_{AK} [E_{AK} (A)] =A
932
905
906
Asset for Use by Application (e.g. Audio Asset can be Decompressed for Playback)

FIG. 9

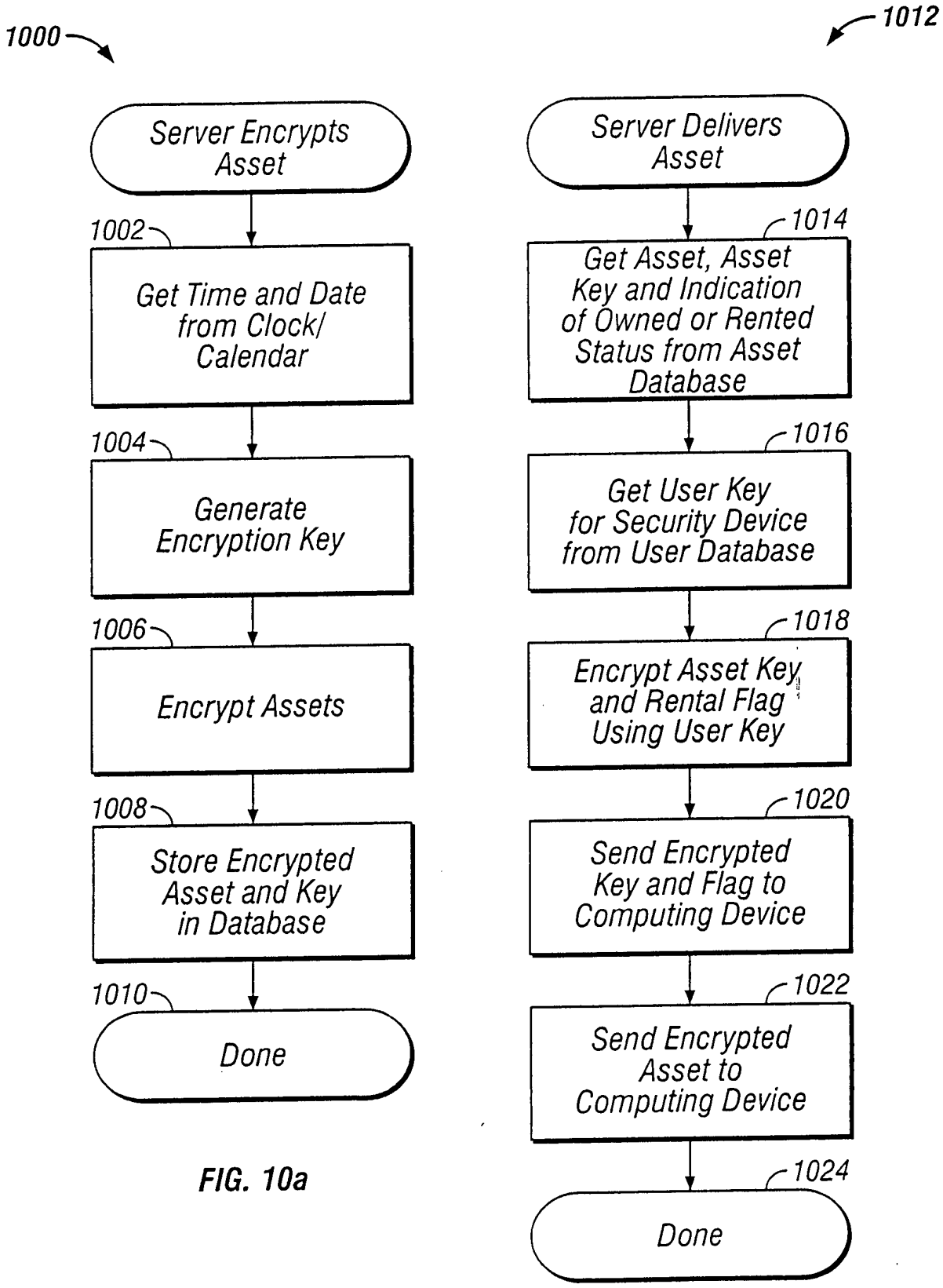

FIG. 10a

FIG. 10b

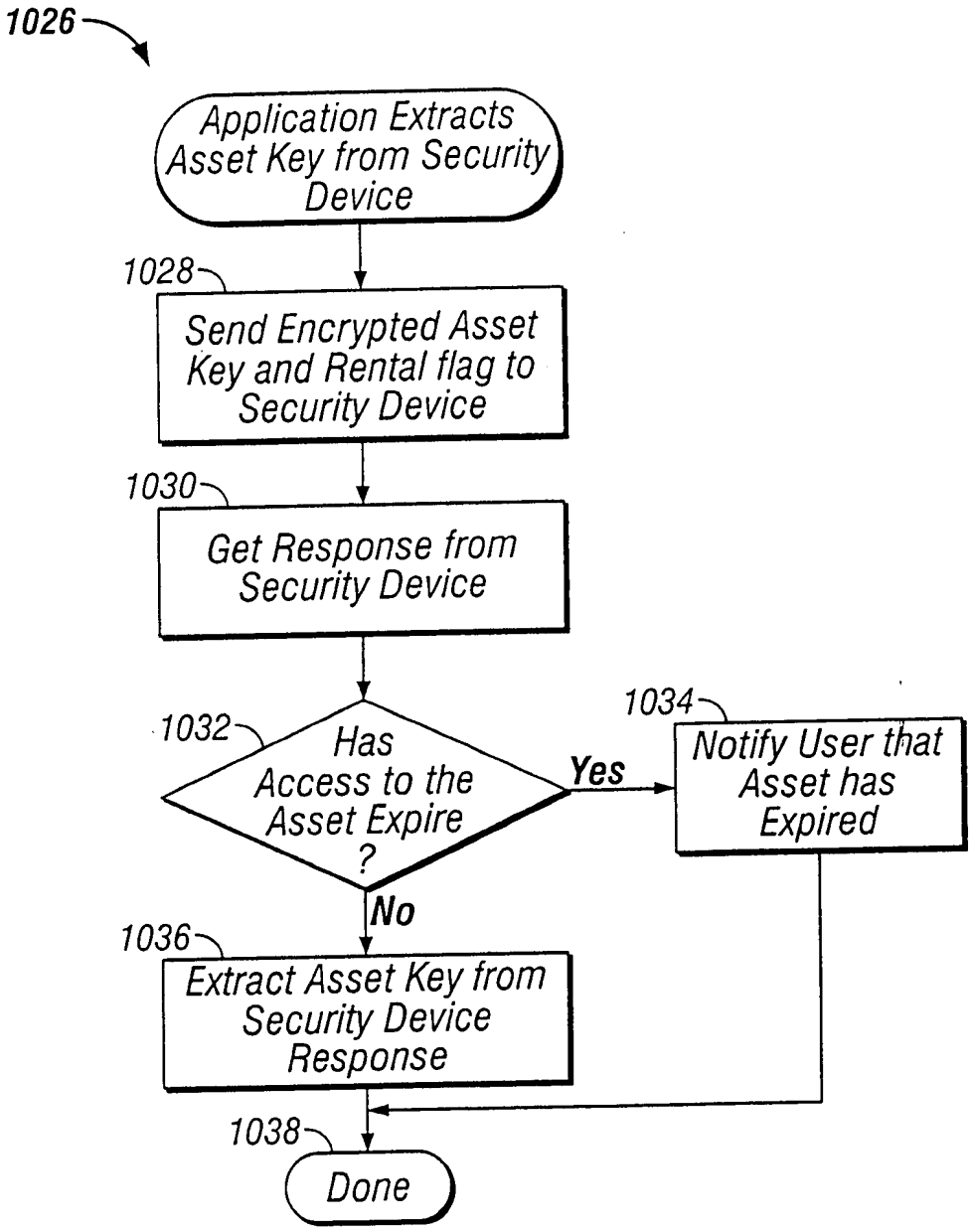
1026
Application Extracts Asset Key from Security Device
1028
Send Encrypted Asset Key and Rental flag to Security Device
1030
Get Response from Security Device
1032
Has Access to the Asset Expire ?
Yes
1034
Notify User that Asset has Expired
No
1036
Extract Asset Key from Security Device Response
1038
Done

FIG. 10c

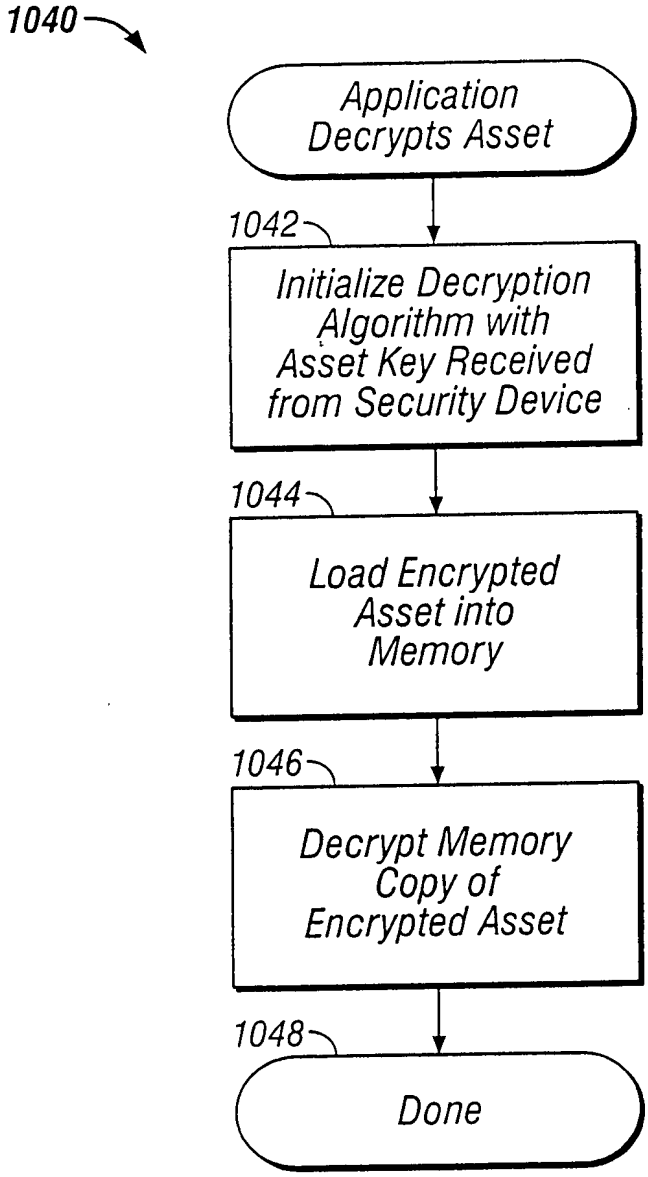
1040
Application Decrypts Asset
1042
Initialize Decryption Algorithm with Asset Key Received from Security Device
1044
Load Encrypted Asset into Memory
1046
Decrypt Memory Copy of Encrypted Asset
1048
Done

FIG. 10d

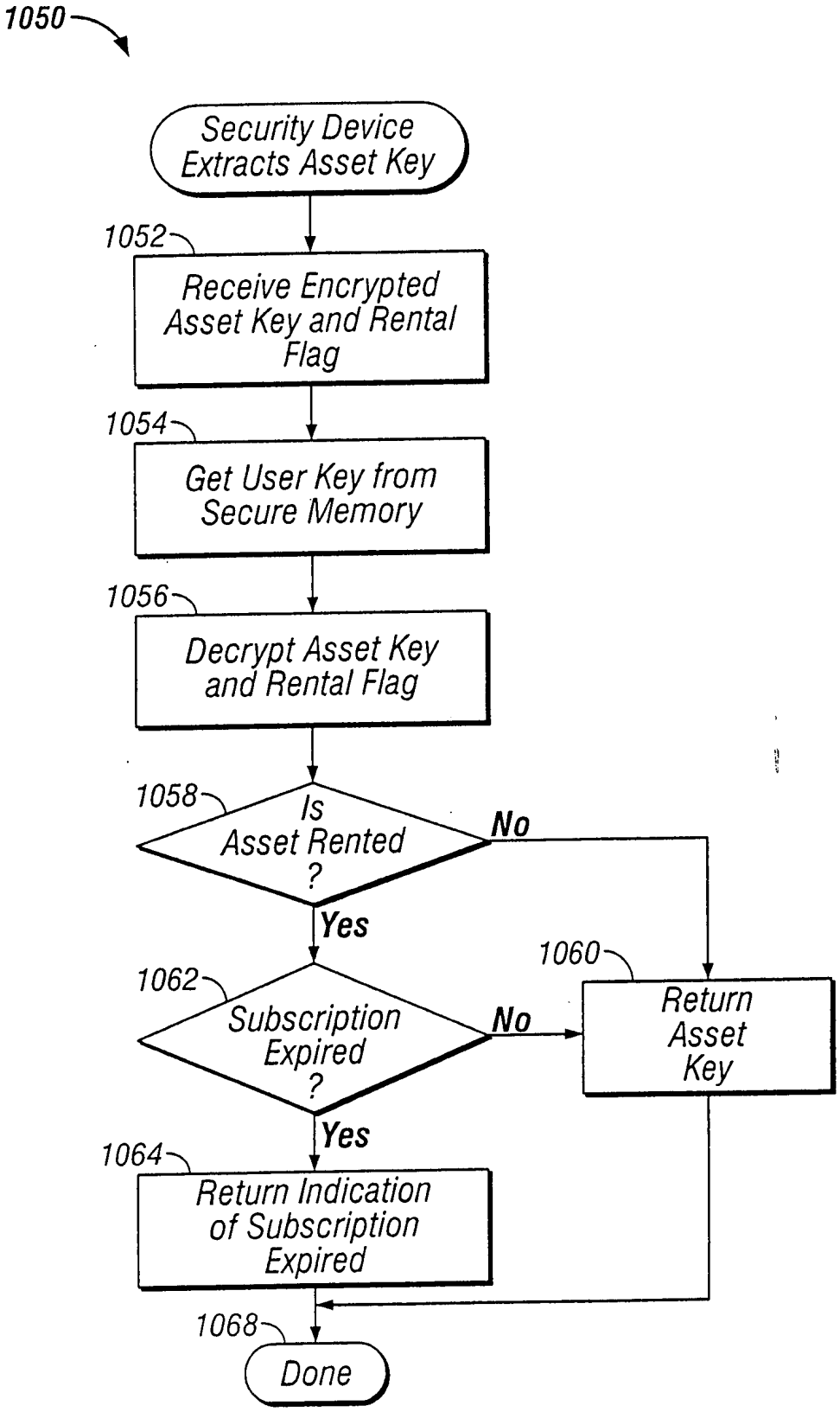
1050
Security Device Extracts Asset Key
1052
Receive Encrypted Asset Key and Rental Flag
1054
Get User Key from Secure Memory
1056
Decrypt Asset Key and Rental Flag
1058
Is Asset Rented ?
No
Yes
1060
Return Asset Key
1062
Subscription Expired ?
No
Yes
1064
Return Indication of Subscription Expired
1068
Done

FIG. 10e